

10/810211

=> file registry

FILE 'REGISTRY' ENTERED AT 11:05:21 ON 28 AUG 2009

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Property values tagged with IC are from the ZIC/VINITI data file  
provided by InfoChem.

STRUCTURE FILE UPDATES: 26 AUG 2009 HIGHEST RN 1176333-21-3

DICTIONARY FILE UPDATES: 26 AUG 2009 HIGHEST RN 1176333-21-3

New CAS Information Use Policies, enter HELP USAGETERMS for details.

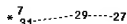
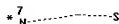
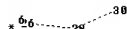
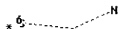
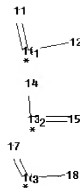
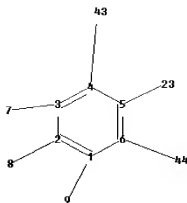
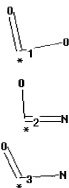
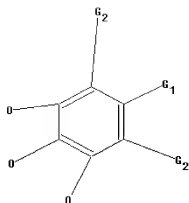
TSCA INFORMATION NOW CURRENT THROUGH June 26, 2009.

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and  
predicted properties as well as tags indicating availability of  
experimental property data in the original document. For information  
on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stdoc/properties.html>

Uploading L1.str



```

chain nodes :
7  8  9 10 11 12 13 14 15 16 17 18 23 24 25 26 27 28 29 30 31
32 33 34 43 44
ring nodes :
1  2  3  4  5  6
chain bonds :
1-9  2-8  3-7  4-43  5-23  6-44  10-11  10-12  13-14  13-15  16-17  16-18  26-28
27-29  28-30  29-31
ring bonds :
1-2  1-6  2-3  3-4  4-5  5-6
exact/norm bonds :
1-9  2-8  3-7  4-43  5-23  6-44  10-11  10-12  13-14  13-15  16-17  16-18  26-28
27-29  28-30  29-31
normalized bonds :

```

10/810211

1-2 1-6 2-3 3-4 4-5 5-6

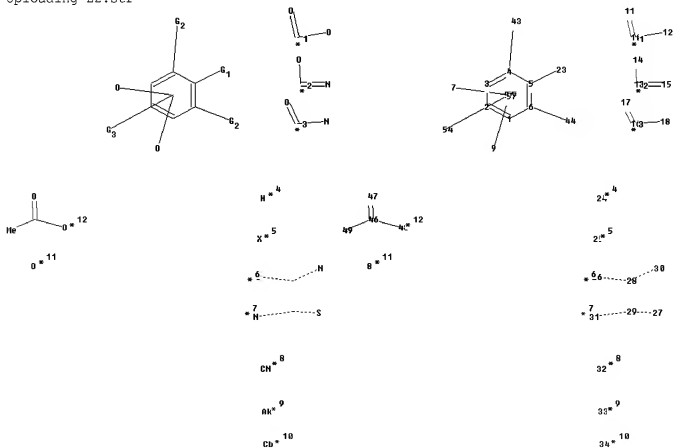
G1:[\*1],[\*2],[\*3]

G2:[\*4],[\*5],[\*6],[\*7],[\*8],[\*9],[\*10]

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:CLASS 8:CLASS 9:CLASS 10:CLASS  
 11:CLASS 12:CLASS 13:CLASS 14:CLASS 15:CLASS 16:CLASS 17:CLASS 18:CLASS  
 23:CLASS 24:CLASS  
 25:CLASS 26:CLASS 27:CLASS 28:CLASS 29:CLASS 30:CLASS 31:CLASS 32:CLASS  
 33:CLASS 34:Atom  
 43:CLASS 44:CLASS

Uploading L2.str



chain nodes :

7 8 9 10 11 12 13 14 15 16 17 18 23 24 25 26 27 28 29 30 31  
 32 33 34 43 44 46 47 48 49 54

ring nodes :

1 2 3 4 5 6

chain bonds :

4-43 5-23 6-44 10-11 10-12 13-14 13-15 16-17 16-18 26-28 27-29 28-30  
 29-31 46-47 46-48 46-49

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6

exact/norm bonds :

10/810211

4-43 5-23 6-44 10-11 10-12 13-14 13-15 16-17 16-18 26-28 27-29 28-30  
29-31 46-47 46-48  
exact bonds :  
46-49  
normalized bonds :  
1-2 1-6 2-3 3-4 4-5 5-6

G1:[\*1],[\*2],[\*3]

G2:[\*4],[\*5],[\*6],[\*7],[\*8],[\*9],[\*10]

G3:[\*11],[\*12]

Connectivity :  
8:1 E exact RC ring/chain  
Match level :  
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:CLASS 8:CLASS 9:CLASS 10:CLASS  
11:CLASS 12:CLASS 13:CLASS 14:CLASS 15:CLASS 16:CLASS 17:CLASS 18:CLASS  
23:CLASS 24:CLASS  
25:CLASS 26:CLASS 27:CLASS 28:CLASS 29:CLASS 30:CLASS 31:CLASS 32:CLASS  
33:CLASS 34:Atom  
43:CLASS 44:CLASS 46:CLASS 47:CLASS 48:CLASS 49:CLASS 54:CLASS 55:CLASS  
56:CLASS 57:CLASS

=> file zcaplus  
FILE 'ZCAPLUS' ENTERED AT 11:05:23 ON 28 AUG 2009  
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FILE COVERS 1907 - 28 Aug 2009 VOL 151 ISS 10  
FILE LAST UPDATED: 27 Aug 2009 (20090827/ED)  
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Jun 2009  
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Jun 2009

ZCaplus now includes complete International Patent Classification (IPC) reclassification data for the third quarter of 2009.

CAS Information Use Policies apply and are available at:

<http://www.cas.org/legal/infopolicy.html>

This file contains CAS Registry Numbers for easy and accurate substance identification.

The ALL, BIB, MAX, and STD display formats in the CA/Caplus family of databases have been updated to include new citing references information. This enhancement may impact record import into database management software. For additional information, refer to NEWS 9.

'OBI' IS DEFAULT SEARCH FIELD FOR 'ZCAPLUS' FILE

=> d stat que L28

L1 STR

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

Structure attributes must be viewed using STN Express query preparation.

L2 STR

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

Structure attributes must be viewed using STN Express query preparation.

L5 6619 SEA FILE=REGISTRY SSS FUL L1 AND L2  
 L6 26435 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L5  
 L20 959 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?SAFENER?/BI  
 L28 2 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L6 AND L20

=> d stat que L31

L1 STR

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

Structure attributes must be viewed using STN Express query preparation.

L2 STR

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

Structure attributes must be viewed using STN Express query preparation.

L5 6619 SEA FILE=REGISTRY SSS FUL L1 AND L2  
 L6 26435 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L5  
 L22 7342 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?ANTIDOTE?/BI  
 L23 353363 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON 5/CC, SX, SC  
 L30 15 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L6 AND L22  
 L31 3 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L30 AND L23

=> d stat que L59

L1 STR

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

Structure attributes must be viewed using STN Express query preparation.

L2 STR

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

Structure attributes must be viewed using STN Express query preparation.

L5 6619 SEA FILE=REGISTRY SSS FUL L1 AND L2  
 L6 26435 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L5  
 L8 4 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON (1132-21-4/BI OR  
 141112-29-0/BI OR 173159-57-4/BI OR 530-57-4/BI)  
 L9 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 141112-29-0

10/810211

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L10      1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 173159-57-4
L11      2 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON (L9 OR L10)
L12      1573854 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?PLANT?/BI
L13      374345 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?SEED?/BI
L14      222949 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?PROPAGAT?/BI
L15      95842 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?HERBICID?/BI
L16      610849 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?ICID?/BI
L17      13955 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?BIOCID?/BI
L18      67493 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON AGRO?/BI
L19      99601 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON AGRI?/BI
L21      63339 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?ADJUVANT?/BI
L23      353363 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON 5/CC, SX, SC
L24      462 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L11
L25      298 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?PHYTOCID?/BI
L26      25907 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON WEED CONTROL?/BI
L27      268 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON WEEDICID?/BI
L32      5730 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L6 AND ((L12 OR L13
OR L14 OR L15 OR L16 OR L17 OR L18 OR L19) OR L21 OR (L23 OR
L24 OR L25 OR L26 OR L27))
L33      1295 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L32 AND P/DT
L34      4435 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L32 NOT L33
L36      635 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L33 AND PRD<20030326
L37      620 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L33 AND AD<20030326
L38      541 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L33 AND PD<20030326
L41      1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON L8 AND 5/0
L43      136 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L5 (L) AGR/RL
L44      95 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L43 AND P/DT
L45      41 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L43 NOT L44
L47      41 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L44 AND PRD<20030326
L48      30 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L44 AND PD<20030326
L49      41 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L44 AND AD<20030326
L54      2709 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L34 AND PY<2003
L55      3379 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L54 OR (L36 OR L37 OR
L38)
L56      17 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L45 AND PY<2003
L57      58 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L56 OR (L47 OR L48 OR
L49)
L58      3381 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L55 OR L57
L59      12 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L58 AND (L41 (L)
AGR/RL)

```

=> d stat que L81

L1 STR

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

Structure attributes must be viewed using STN Express query preparation.

L2 STR

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

Structure attributes must be viewed using STN Express query preparation.

```

L5      6619 SEA FILE=REGISTRY SSS FUL L1 AND L2
L6      26435 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L5
L8      4 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON (1132-21-4/BI OR
141112-29-0/BI OR 173159-57-4/BI OR 530-57-4/BI)
L9      1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 141112-29-0
L10     1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 173159-57-4
L11     2 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON (L9 OR L10)

```

L12 1573854 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?PLANT?/BI  
 L13 374345 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?SEED?/BI  
 L14 222949 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?PROPAGAT?/BI  
 L15 95842 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?HERBICID?/BI  
 L16 610849 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?ICID?/BI  
 L17 13955 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?BIOCID?/BI  
 L18 67493 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON AGRO?/BI  
 L19 99601 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON AGRI?/BI  
 L21 63339 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?ADJUVANT?/BI  
 L23 353363 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON 5/CC, SX, SC  
 L24 462 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L11  
 L25 298 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?PHYTOCID?/BI  
 L26 25907 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON WEED CONTROL?/BI  
 L27 268 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON WEEDICID?/BI  
 L32 5730 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L6 AND ((L12 OR L13  
 OR L14 OR L15 OR L16 OR L17 OR L18 OR L19) OR L21 OR L23 OR  
 L24 OR L25 OR L26 OR L27))  
 L33 1295 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L32 AND P/DT  
 L34 4435 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L32 NOT L33  
 L36 635 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L33 AND PRD<20030326  
 L37 620 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L33 AND AD<20030326  
 L38 541 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L33 AND PD<20030326  
 L41 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON L8 AND 5/O  
 L43 136 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L5 (L) AGR/RL  
 L44 95 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L43 AND P/DT  
 L45 41 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L43 NOT L44  
 L47 41 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L44 AND PRD<20030326  
 L48 30 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L44 AND PD<20030326  
 L49 41 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L44 AND AD<20030326  
 L54 2709 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L34 AND PY<2003  
 L55 3379 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L54 OR (L36 OR L37 OR  
 L38)  
 L56 17 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L45 AND PY<2003  
 L57 58 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L56 OR (L47 OR L48 OR  
 L49)  
 L58 3381 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L55 OR L57  
 L62 39073 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ZEA MAYS?/BI  
 L63 31320 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON TRITICUM AESTIVUM/BI  
 L64 18095 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON SORGHUM/BI  
 L65 4291 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON SECALE CEREALE/BI  
 L66 5269 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON PANICUM/BI  
 L67 16049 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON HORDEUM VULGARE/BI  
 L68 2362 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON FAGOPYRUM ESCULENTUM/B  
 I  
 L69 47260 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON CEREAL?/BI  
 L70 57166 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON BARLEY?/BI  
 L71 24491 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON BRAN/BI  
 L72 143166 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON CORN/BI  
 L73 45485 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ORYZA SATIVA/BI  
 L74 118899 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON RICE/BI  
 L75 130626 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON COTTON/BI  
 L76 139287 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON SOYBEAN?/BI  
 L77 390 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L58 AND (L62 OR L63  
 OR L64 OR L65 OR L66 OR L67 OR L68 OR L69 OR L70 OR L71 OR L72  
 OR L73 OR L74 OR L75 OR L76)  
 L79 300 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L41 (L) USES/RL  
 L80 8 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L77 AND L79  
 L81 2 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L80 AND L23

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=> d stat que L82  
L1 STR

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

Structure attributes must be viewed using STN Express query preparation.  
L2 STR

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

Structure attributes must be viewed using STN Express query preparation.

L5 6619 SEA FILE=REGISTRY SSS FUL L1 AND L2  
L6 26435 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L5  
L8 4 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON (1132-21-4/BI OR  
141112-29-0/BI OR 173159-57-4/BI OR 530-57-4/BI)  
L9 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 141112-29-0  
L10 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 173159-57-4  
L11 2 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON (L9 OR L10)  
L12 1573854 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?PLANT?/BI  
L13 374345 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?SEED?/BI  
L14 222949 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?PROPAGAT?/BI  
L15 95842 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?HERBTICID?/BI  
L16 610849 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?ICID?/BI  
L17 13955 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?BIOCID?/BI  
L18 67493 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON AGRO?/BI  
L19 99601 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON AGRI?/BI  
L21 63339 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?ADJUVANT?/BI  
L23 353363 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON 5/CC,SX,SC  
L24 462 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L11  
L25 298 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?PHYTOCID?/BI  
L26 25907 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON WEED CONTROL?/BI  
L27 268 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON WEEDICID?/BI  
L32 5730 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L6 AND ((L12 OR L13  
OR L14 OR L15 OR L16 OR L17 OR L18 OR L19) OR L21 OR (L23 OR  
L24 OR L25 OR L26 OR L27))  
L33 1295 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L32 AND P/DT  
L34 4435 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L32 NOT L33  
L36 635 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L33 AND PRD<20030326  
L37 620 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L33 AND AD<20030326  
L38 541 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L33 AND PD<20030326  
L41 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON L8 AND 5/0  
L43 136 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L5 (L1 AGR/RL  
L44 95 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L43 AND P/DT  
L45 41 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L43 NOT L44  
L47 41 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L44 AND PRD<20030326  
L48 30 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L44 AND PD<20030326  
L49 41 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L44 AND AD<20030326  
L54 2709 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L34 AND PY<2003  
L55 3379 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L54 OR (L36 OR L37 OR  
L38)  
L56 17 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L45 AND PY<2003  
L57 58 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L56 OR (L47 OR L48 OR  
L49)  
L58 3381 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L55 OR L57  
L62 39073 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ZEA MAYS?/BI  
L63 31320 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON TRITICUM AESTIVUM/BI  
L64 18095 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON SORGHUM/BI  
L65 4291 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON SECALE CEREALE/BI  
L66 5269 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON PANICUM/BI  
L67 16049 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON HORDEUM VULGARE/BI



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L68      2362 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON FAGOPYRUM ESCULENTUM/B
          I
L69      47260 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON CEREAL?/BI
L70      57166 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON BARLEY?/BI
L71      24491 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON BRAN/BI
L72      143166 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON CORN/BI
L73      45485 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ORYZA SATIVA/BI
L74      118899 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON RICE/BI
L75      130626 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON COTTON/BI
L76      139287 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON SOYBEAN?/BI
L77      390 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L58 AND (L62 OR L63
          OR L64 OR L65 OR L66 OR L67 OR L68 OR L69 OR L70 OR L71 OR L72
          OR L73 OR L74 OR L75 OR L76)
L79      300 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L41 (L) USES/RL
L80      8 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L77 AND L79
L82      3 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L80 AND 3/CC

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=> d stat que L85

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L1      STR
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\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

Structure attributes must be viewed using STN Express query preparation.

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L2      STR
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\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

Structure attributes must be viewed using STN Express query preparation.

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L5      6619 SEA FILE=REGISTRY SSS FUL L1 AND L2
L6      26435 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L5
L9      1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 141112-29-0
L10     1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 173159-57-4
L11     2 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON (L9 OR L10)
L12     1573854 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?PLANT?/BI
L13     374345 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?SEED?/BI
L14     222949 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?PROPAGAT?/BI
L15     95842 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?HERBICID?/BI
L16     610849 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?ICID?/BI
L17     13955 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?BIOCID?/BI
L18     67493 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON AGRO?/BI
L19     99601 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON AGRI?/BI
L21     63339 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?ADJUVANT?/BI
L23     353363 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON 5/CC, SX, SC
L24     462 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L11
L25     298 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?PHYTOCID?/BI
L26     25907 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON WEED CONTROL?/BI
L27     268 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON WEEDICID?/BI
L32     5730 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L6 AND ((L12 OR L13
          OR L14 OR L15 OR L16 OR L17 OR L18 OR L19) OR L21 OR (L23 OR
          L24 OR L25 OR L26 OR L27))
L33     1295 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L32 AND P/DT
L34     4435 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L32 NOT L33
L36     635 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L33 AND PRD<20030326
L37     620 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L33 AND AD<20030326
L38     541 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L33 AND PD<20030326
L43     136 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L5 (L) AGR/RL
L44     95 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L43 AND P/DT
L45     41 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L43 NOT L44
L47     41 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L44 AND PRD<20030326

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10/810211

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L48      30 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L44 AND PD<20030326
L49      41 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L44 AND AD<20030326
L54      2709 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L34 AND PY<2003
L55      3379 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L54 OR (L36 OR L37 OR
L56      L38)
L56      17 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L45 AND PY<2003
L57      58 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L56 OR (L47 OR L48 OR
L58      L49)
L58      3381 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L55 OR L57
L62      39073 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ZEA MAY5?/BI
L63      31320 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON TRITICUM AESTIVUM/BI
L64      18095 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON SORGHUM/BI
L65      4291 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON SECALE CEREALE/BI
L66      5269 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON PANICUM/BI
L67      16049 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON HORDEUM VULGARE/BI
L68      2362 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON FAGOPYRUM ESCULENTUM/BI
L69      47260 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON CEREAL?/BI
L70      57166 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON BARLEY?/BI
L71      24491 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON BRAN/BI
L72      143166 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON CORN/BI
L73      45485 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ORYZA SATIVA/BI
L74      118899 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON RICE/BI
L75      130626 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON COTTON/BI
L76      139287 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON SOYBEAN?/BI
L77      390 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L58 AND (L62 OR L63
L77      OR L64 OR L65 OR L66 OR L67 OR L68 OR L69 OR L70 OR L71 OR L72
L77      OR L73 OR L74 OR L75 OR L76)
L83      9058 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L5 (L) USES/RL
L84      89 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L83 AND L77
L85      10 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L84 AND L23

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L1 STR

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

Structure attributes must be viewed using STN Express query preparation.

L2 STR

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

Structure attributes must be viewed using STN Express query preparation.

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L5      6619 SEA FILE=REGISTRY SSS FUL L1 AND L2
L6      26435 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L5
L9      1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 141112-29-0
L10     1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 173159-57-4
L11     2 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON (L9 OR L10)
L12     1573854 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?PLANT?/BI
L13     374345 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?SEED?/BI
L14     222949 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?PROPAGAT?/BI
L15     95842 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?HERBICID?/BI
L16     610849 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?ICID?/BI
L17     13955 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?BIOCID?/BI
L18     67493 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON AGRO?/BI
L19     99601 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON AGRI?/BI
L21     63339 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?ADJUVANT?/BI
L23     353363 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON 5/CC, SX, SC
L24     462 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L11

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L25 298 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ?PHYTOCID?/BI  
 L26 25907 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON WEED CONTROL?/BI  
 L27 268 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON WEEDICID?/BI  
 L32 5730 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L6 AND ((L12 OR L13  
 OR L14 OR L15 OR L16 OR L17 OR L18 OR L19) OR L21 OR (L23 OR  
 L24 OR L25 OR L26 OR L27))  
 L33 1295 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L32 AND P/DT  
 L34 4435 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L32 NOT L33  
 L36 635 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L33 AND PRD<20030326  
 L37 620 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L33 AND AD<20030326  
 L38 541 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L33 AND PD<20030326  
 L43 136 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L5 (L) AGR/RL  
 L44 95 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L43 AND P/DT  
 L45 41 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L43 NOT L44  
 L47 41 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L44 AND PRD<20030326  
 L48 30 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L44 AND PD<20030326  
 L49 41 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L44 AND AD<20030326  
 L54 2709 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L34 AND PY<2003  
 L55 3379 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L54 OR (L36 OR L37 OR  
 L38)  
 L56 17 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L45 AND PY<2003  
 L57 58 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L56 OR (L47 OR L48 OR  
 L49)  
 L58 3381 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L55 OR L57  
 L62 39073 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ZEA MAYS?/BI  
 L63 31320 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON TRITICUM AESTIVUM/BI  
 L64 18095 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON SORGHUM/BI  
 L65 4291 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON SECALE CEREALE/BI  
 L66 5269 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON PANICUM/BI  
 L67 16049 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON HORDEUM VULGARE/BI  
 L68 2362 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON FAGOPYRUM ESCULENTUM/BI  
 I  
 L69 47260 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON CEREAL?/BI  
 L70 57166 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON BARLEY?/BI  
 L71 24491 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON BRAN/BI  
 L72 143166 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON CORN/BI  
 L73 45485 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON ORYZA SATIVA/BI  
 L74 118899 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON RICE/BI  
 L75 130626 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON COTTON/BI  
 L76 139287 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON SOYBEAN?/BI  
 L77 390 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L58 AND (L62 OR L63  
 OR L64 OR L65 OR L66 OR L67 OR L68 OR L69 OR L70 OR L71 OR L72  
 OR L73 OR L74 OR L75 OR L76)  
 L86 5 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L77 AND (L26 OR L27)  
 L87 1 SEA FILE=ZCAPLUS SPE=ON ABB=ON PLU=ON L86 AND NEW GROWTH/TI

=> s L28 or L31 or L59 or L81 or L82 or L85 or L87  
 L92 27 L28 OR L31 OR L59 OR L81 OR L82 OR L85 OR L87

=> d iall hitstr L92 1-27

L92 ANSWER 1 OF 27 ZCAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2007:1294726 ZCAPLUS Full-text  
 DOCUMENT NUMBER: 147:481471  
 ENTRY DATE: Entered STN: 15 Nov 2007  
 TITLE: Process for soybean seed treatment  
 INVENTOR(S): Piscorscaia, Valentina; Siscanu, Gheorghe; Stefirta,  
 Anastasia; Turta, Constantin; Zubarev, Vera

10/810211

PATENT ASSIGNEE(S): Institutul de Fiziologie a Plantelor Al Academiei de  
 Stiinte A Republicii Moldova, Moldova; Institutul de  
 Chimie Al Academiei de Stiinte A Republicii Moldova  
 SOURCE: Mold., 8pp.  
 CODEN: MDXXCZ  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Moldavian  
 INT. PATENT CLASSIF.:  
 MAIN: A01C001-00  
 SECONDARY: A01N055-00  
 CLASSIFICATION: 5-3 (Agrochemical Bioregulators)  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
MD 1386	F1	20000131	MD 1999-103	19990325 <--
			MD 1999-103	19990325 <--

PRIORITY APPLN. INFO.:

PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
MD 1386	ICM	A01C001-00
	ICS	A01N055-00
	IPCI	A01C0001-00 [ICM,7]; A01N0055-00 [ICS,7]
	IPCR	A01C0001-00 [I,C*]; A01C0001-00 [I,A]; A01N0055-00 [I,C*]; A01N0055-00 [I,A]

# ABSTRACT:

The claimed method for presowing soybean seed treatment involves use of 0.0001-0.001% aqueous solution of potassium gallate with formula  $KC_7H_5O_4 \times 0.25 C_7H_6O_5 \times 1.5H_2O$ . The agent is prepared by reaction of gallic acid with K acetate in methanol at room temperature; the mixture is agitated until the clear solution yields precipitate with .apprx.50% yield. The product was characterized by elemental anal., summary formula, and IR spectroscopy. The seed treatment increases soybean yields.

SUPPL. TERM: soybean seed presowing treatment potassium gallate synthesis  
 INDEX TERM: Glycine max

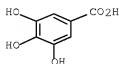
Soybean  
 (process for soybean seed presowing  
 treatment with potassium gallate to increase grain  
 yields)  
 INDEX TERM: 17103-65-0P, Potassium gallate  
 ROLE: AGR (Agricultural use); SPN (Synthetic  
 preparation); BIOL (Biological study); PREP (Preparation);  
 USES (Uses)

(process for soybean seed presowing  
 treatment with potassium gallate to increase grain  
 yields)  
 INDEX TERM: 127-08-2, Potassium acetate 149-91-7, Gallic  
 acid, reactions  
 ROLE: RCT (Reactant); RACT (Reactant or reagent)  
 (process for soybean seed presowing  
 treatment with potassium gallate to increase grain  
 yields)

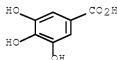
IT 17103-65-0P, Potassium gallate  
 RL: AGR (Agricultural use); SPN (Synthetic preparation); BIOL  
 (Biological study); PREP (Preparation); USES (Uses)  
 (process for soybean seed presowing treatment with

10/810211

potassium gallate to increase grain yields)  
RN 17103-65-0 ZCAPLUS  
CN Benzoic acid, 3,4,5-trihydroxy-, potassium salt (1:1) (CA INDEX NAME)



IT 149-91-7, Gallic acid, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(process for soybean seed presowing treatment with  
potassium gallate to increase grain yields)  
RN 149-91-7 ZCAPLUS  
CN Benzoic acid, 3,4,5-trihydroxy- (CA INDEX NAME)



L92 ANSWER 2 OF 27 ZCAPLUS COPYRIGHT 2009 ACS on STN  
ACCESSION NUMBER: 2005:423693 ZCAPLUS [Full-text](#)  
DOCUMENT NUMBER: 142:458552  
ENTRY DATE: Entered STN: 19 May 2005  
TITLE: Strobilurine fungicides with ethylene modulators  
Harden, John S.; Begliomini, Edson; Bardinelli, Ted  
R.; Everson, Albert C.; Ypema, Hendrik; Holt, Thomas  
J.; Zawierucha, Joseph E.; Westberg, Dan E.;  
Rademacher, Wilhelm  
PATENT ASSIGNEE(S): BASF Aktiengesellschaft, Germany  
SOURCE: PCT Int. Appl., 25 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
INT. PATENT CLASSIF.:  
MAIN: A01N  
CLASSIFICATION: 5-2 (Agrochemical Bioregulators)  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005044002	A2	20050519	WO 2004-EP12514	20041105
WO 2005044002	A3	20050721		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,				

GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,  
 LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,  
 NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,  
 TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW,  
 RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,  
 AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,  
 EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO,  
 SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,  
 NE, SN, TD, TG

AU 2004286794 A1 20050519 AU 2004-286794 20041105  
 CA 2544339 A1 20050519 CA 2004-2544339 20041105  
 EP 1681931 A2 20060726 EP 2004-797635 20041105

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS

CN 1878468 A 20061213 CN 2004-80032917 20041105  
 BR 2004016265 A 20070109 BR 2004-16265 20041105  
 JP 2007510631 T 20070426 JP 2006-537257 20041105  
 MX 2006004578 A 20060720 MX 2006-4578 20060425  
 KR 2006113915 A 20061103 KR 2006-708704 20060504  
 US 20070093389 A1 20070426 US 2006-578333 20060504  
 ZA 2006004569 A 20080528 ZA 2006-4569 20060605  
 IN 2006CN02002 A 20070608 IN 2006-CN2002 20060607

PRIORITY APPLN. INFO.:  
 US 2003-517883P P 20031107  
 WO 2004-EP12514 W 20041105

## PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2005044002	ICM	A01N
	IPCI	A01N [ICM,7]
	IPCR	A01N0037-44 [I,C*]; A01N0037-50 [I,A]; A01N0047-10 [I,C*]; A01N0047-24 [I,A]
AU 2004286794	ECLA	A01N037/50+M; A01N047/24+M
	IPCI	A01N0037-44 [I,C*]; A01N0047-10 [I,C*]; A01N0037-50 [I,A]; A01N0047-24 [I,A]
	IPCR	A01N0037-44 [I,C*]; A01N0037-50 [I,A]; A01N0047-10 [I,C*]; A01N0047-24 [I,A]
CA 2544339	ECLA	A01N037/50+M; A01N047/24+M
	IPCI	A01N0027-00 [I,A]; A01N0033-04 [I,A]; A01N0033-00 [I,C*]; A01N0037-36 [I,A]; A01N0037-40 [I,A]; A01N0037-42 [I,A]; A01N0037-44 [I,A]; A01N0037-50 [I,A]; A01N0043-40 [I,A]; A01N0043-34 [I,C*]; A01N0043-54 [I,A]; A01N0043-48 [I,C*]; A01N0043-653 [I,A]; A01N0043-64 [I,C*]; A01N0043-828 [I,A]; A01N0043-88 [I,A]; A01N0043-72 [I,C*]; A01N0047-24 [I,A]; A01N0047-10 [I,C*]; A01N0059-16 [I,A]; A01N0061-00 [I,A]
	IPCR	A01N0047-10 [I,C]; A01N0047-24 [I,A]; A01N0027-00 [I,C]; A01N0027-00 [I,A]; A01N0033-00 [I,C]; A01N0033-04 [I,A]; A01N0037-36 [I,C]; A01N0037-36 [I,A]; A01N0037-40 [I,A]; A01N0037-42 [I,C]; A01N0037-42 [I,A]; A01N0037-44 [I,C]; A01N0037-44 [I,A]; A01N0037-50 [I,A]; A01N0043-34 [I,C]; A01N0043-40 [I,A]; A01N0043-48 [I,C]; A01N0043-54 [I,A]; A01N0043-64 [I,C]; A01N0043-653 [I,A]; A01N0043-72 [I,C]; A01N0043-828 [I,A]; A01N0043-88 [I,A]; A01N0059-16 [I,C]; A01N0059-16 [I,A]; A01N0061-00 [I,C]; A01N0061-00 [I,A]
EP 1681931	ECLA	A01N037/50+M; A01N047/24+M
	IPCI	A01N0047-24 [ICM,7]; A01N0047-10 [ICM,7,C*]; A01N0043-88 [ICS,7]; A01N0043-72 [ICS,7,C*];

		A01N0043-54 [ICS,7]; A01N0043-48 [ICS,7,C*]; A01N0043-40 [ICS,7]; A01N0043-34 [ICS,7,C*]; A01N0037-50 [ICS,7]; A01N0037-44 [ICS,7,C*]
	IPCR	A01N0047-10 [I,C]; A01N0047-24 [I,A]; A01N0037-44 [I,C]; A01N0037-50 [I,A]; A01N0043-34 [I,C]; A01N0043-40 [I,A]; A01N0043-48 [I,C]; A01N0043-54 [I,A]; A01N0043-72 [I,C]; A01N0043-88 [I,A]
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CN 1878468	IPCI	A01N0047-24 [I,A]; A01N0047-10 [I,C*]; A01N0043-88 [I,A]; A01N0043-54 [I,A]; A01N0043-48 [I,C*]; A01N0043-40 [I,A]; A01N0043-34 [I,C*]; A01N0037-50 [I,A]; A01N0061-00 [N,A]; A01N0059-16 [N,A]; A01N0043-828 [N,A]; A01N0043-72 [N,C*]; A01N0043-653 [N,A]; A01N0043-64 [N,C*]; A01N0037-44 [N,A]; A01N0037-42 [N,A]; A01N0037-40 [N,A]; A01N0037-36 [N,A]; A01N0033-04 [N,A]; A01N0033-00 [N,C*]; A01N0027-00 [N,A]
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KR 2006113915	IPCI	A01N0037-52 [I,A]; A01N0037-50 [I,A]; A01N0037-44 [I,C*]; A01N0043-40 [I,A]; A01N0043-34 [I,C*]; A01P0003-00 [I,A]
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US 20070093389 IPCI A01N0063-00 [I,A]; A01N0025-00 [I,A]; A01N0055-02 [I,A]; A01N0055-00 [I,C\*]; A01N0033-24 [I,A]; A01N0033-00 [I,C\*]  
 NCL 504/116.100; 504/118.000; 514/184.000; 514/501.000; 514/640.000  
 ZA 2006004569 IPCI A01N [I,S]  
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 ECLA A01N037/50+M; A01N047/24+M  
 IN 2006CN02002 IPCI A01N [ICM,7]  
 OTHER SOURCE(S): MARPAT 142:458552

## ABSTRACT:

The invention relates to mixts. comprising known strobilurines (azoxystrobin, dimoxystrobin, fluoxastrobin, etc.) and ethylene modulators selected from inhibitors of ethylene biosynthesis which inhibit the conversion of S-adenosyl-L-methionine into ACC, inhibitors of ethylene biosynthesis which block the conversion of ACC into ethylene, or inhibitors of ethylene action. Damage to the host plant was less when the mixts. were applied than with strobilurines alone. A specific use is the control of Phakopsora pachyrhizae and Phakopsora meibomiae in soybean.

SUPPL. TERM: strobilurine fungicide ethylene modulator safener

INDEX TERM: Phakopsora meibomiae  
 Phakopsora pachyrhizi  
 (control in soybean; strobilurine fungicides with ethylene modulators)

INDEX TERM: Fabaceae  
 Glycine max  
 (rust control in; strobilurine fungicides with ethylene modulators)

INDEX TERM: Fungicides  
 (strobilurine fungicides with ethylene modulators)

INDEX TERM: 61-82-5D, 3-Amino-1,2,4-triazole, mixts. with strobilurines  
 62-57-7D,  $\alpha$ -Aminoisobutyric acid, mixts. with strobilurines  
 69-72-7D, Salicylic acid, mixts. with strobilurines  
 71-44-3D, Spermine, mixts. with strobilurines  
 110-60-1D, Putrescine, mixts. with strobilurines  
 121-46-0D, 2,5-Norbornadiene, mixts. with strobilurines  
 121-79-9D, Propyl gallate, mixts. with strobilurines  
 124-20-9D, Spermidine, mixts. with strobilurines  
 645-88-5D, Aminoxyacetic acid, mixts. with strobilurines  
 3100-04-7D, 1-Methylcyclopropene, mixts. with strobilurines  
 14701-21-4D, Silver ion, mixts. with strobilurines, biological studies  
 14701-22-5D, Nickel(II) ion, mixts. with strobilurines, biological studies  
 22541-53-3D, Cobalt(II) ion, mixts. with strobilurines, biological studies  
 49669-74-1D, Aminoethoxyvinylglycine, mixts. with strobilurines  
 76738-62-0D, Paclobutrazol, mixts. with strobilurines  
 83657-22-1D, Uniconazole, mixts. with strobilurines  
 95266-40-3D, Trinexapac-ethyl, mixts. with strobilurines  
 110374-54-4D, mixts. with strobilurines  
 117428-22-5D, Picoxystrobin, mixts. with ethylene modulators  
 126572-77-8D, Strobilurine, mixts. with ethylene modulators  
 127277-53-6D, Prohexadione-Calcium, mixts. with strobilurines  
 131860-33-8D, Azoxystrobin, mixts. with ethylene modulators  
 133408-50-1D, Metaminostrobin, mixts. with ethylene modulators  
 135158-54-2D, Acibenzolar-S-methyl, mixts. with strobilurines  
 141517-21-7D, Trifloxystrobin, mixts. with ethylene modulators  
 143390-89-0D, Kresoxim-methyl, mixts. with



ethylene modulators 149961-52-4D, Dimoxystrobin, mixts.  
 with ethylene modulators 175013-18-0D, Pyraclostrobin,  
 mixts. with ethylene modulators 248593-16-0D,  
 Orysastrobin, mixts. with ethylene modulators  
 361377-29-9D, Fluoxastrobin, mixts. with ethylene modulators  
 851450-32-3 851450-33-4, Cabrio-salicylic acid mixture  
 851596-29-7, Cabrio-cobalt chloride mixture 851596-30-0,  
 Headline-Keylate Cobalt mixture  
 ROLE: AGR (Agricultural use); BIOL (Biological study); USES  
 (Uses)

(strobilurine fungicides with ethylene modulators)

OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

DATE LAST CITED: Date last citing reference entered STN: 16 Feb 2009

OS.CITING.REFS: CAPLUS 2008:734960; 2006:632743

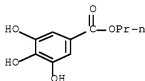
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD.

REFERENCE(S): (1) Anon; US 20030060371 A1  
 (2) Anon; US 5869424 A ZCAPLUS  
 (3) Anon; US 6369090 B1 ZCAPLUS  
 (4) Anon; WO 9600005 A1 ZCAPLUS  
 (5) Anon; WO 9740688 A1 ZCAPLUS  
 (6) Anon; WO 9948370 A1 ZCAPLUS

IT 121-79-9D, Propyl gallate, mixts. with strobilurines  
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
 (strobilurine fungicides with ethylene modulators)

RN 121-79-9 ZCAPLUS

CN Benzoic acid, 3,4,5-trihydroxy-, propyl ester (CA INDEX NAME)



L92 ANSWER 3 OF 27 ZCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2004:817606 ZCAPLUS Full-text

DOCUMENT NUMBER: 141:273021

ENTRY DATE: Entered STN: 07 Oct 2004

TITLE: Use of aromatic hydroxy compounds as herbicide safeners

INVENTOR(S): Bickers, Udo; Willms, Lothar; Hacker, Erwin; Rosinger, Christopher

PATENT ASSIGNEE(S): Bayer Cropscience G.m.b.H., Germany

SOURCE: PCT Int. Appl., 127 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: German

INT. PATENT CLASSIF.:

MAIN: A01N025-32

SECONDARY: A01N037-40; A01N037-44; C07C229-60; C07C229-64;  
 C07C235-46; C07C237-36; C07C237-44; C07C243-38;  
 C07C255-53; C07C255-54; C07C255-55; C07C255-58;

C07C255-59; C07C065-03

CLASSIFICATION: 5-3 (Agrochemical Bioregulators)

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004084631	A1	20041007	WO 2004-EP2797	20040318
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DK, DM, DZ, EC, EE, EG, ES, FI, FG, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2004224813	A1	20041007	AU 2004-224813	20040318
CA 2520228	A1	20041007	CA 2004-2520228	20040318
EP 1610611	A1	20060104	EP 2004-721478	20040318
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BR 2004008943	A	20060404	BR 2004-8943	20040318
CN 1764374	A	20060426	CN 2004-80007969	20040318
JP 2006521311	T	20060921	JP 2006-504717	20040318
US 20040224844	A1	20041111	US 2004-810211	20040326
ZA 2005006657	A	20070131	ZA 2005-6657	20050819
KR 2006002857	A	20060109	KR 2005-717888	20050923
IN 2005CN2374	A	20070831	IN 2005-CN2374	20050923
PRIORITY APPLN. INFO.:			DE 2003-10313480	A 20030326
			WO 2004-EP2797	W 20040318

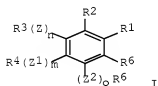
PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2004084631	ICM	A01N025-32
	ICS	A01N037-40; A01N037-44; C07C229-60; C07C229-64; C07C235-46; C07C237-36; C07C237-44; C07C243-38; C07C255-53; C07C255-54; C07C255-55; C07C255-58; C07C255-59; C07C065-03
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	ECLA	A01N025/32; A01N037/40; A01N037/40+M; A01N037/44;

		C07C065/03; C07C065/21; C07C069/017; C07C069/88; C07C069/90; C07C069/92
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JP 2006521311	IPCI	A01N0025-00 [I,A]; A01N0043-80 [I,A]; A01N0043-72 [I,C*]; A01N0047-36 [I,A]; A01N0047-28 [I,C*]; A01P0013-02 [I,A]
	IPCR	A01N0025-00 [I,C]; A01N0025-00 [I,A]; A01N0025-32 [I,C*]; A01N0025-32 [I,A]; A01N0037-36 [I,C*]; A01N0037-40 [I,A]; A01N0037-44 [I,C*]; A01N0037-44 [I,A]; A01N0043-72 [I,C]; A01N0043-80 [I,A]; A01N0047-28 [I,C]; A01N0047-36 [I,A]; A01P0013-02 [I,C]; A01P0013-02 [I,A]; C07C0065-00 [I,C*]; C07C0065-03 [I,A]; C07C0065-21 [I,A]; C07C0069-00 [I,C*]; C07C0069-017 [I,A]; C07C0069-88 [I,A]; C07C0069-90 [I,A]; C07C0069-92 [I,A]
	ECLA	A01N025/32; A01N037/40; A01N037/40+M; A01N037/44; C07C065/03; C07C065/21; C07C069/017; C07C069/88; C07C069/90; C07C069/92
	FTERM	4H011/AB01; 4H011/BA03; 4H011/BB10; 4H011/BB14; 4H011/BC06; 4H011/DA15; 4H011/DD03; 4H011/DD04
US 20040224844	IPCI	A01N0043-66 [ICM,7]; A01N0043-64 [ICM,7,C*]; A01N0025-32 [ICS,7]
	IPCR	A01N0025-32 [I,C*]; A01N0025-32 [I,A]; A01N0037-36 [I,C*]; A01N0037-40 [I,A]; A01N0037-44 [I,C*]; A01N0037-44 [I,A]; C07C0065-00 [I,C*]; C07C0065-03 [I,A]; C07C0065-21 [I,A]; C07C0069-00 [I,C*]; C07C0069-017 [I,A]; C07C0069-88 [I,A]; C07C0069-90 [I,A]; C07C0069-92 [I,A]
	NCL	504/111.000
	ECLA	A01N025/32; A01N037/40; A01N037/40+M; A01N037/44; C07C065/03; C07C065/21; C07C069/017; C07C069/88; C07C069/90; C07C069/92
ZA 2005006657	IPCI	A01N [I,S]; C07C [I,S]
	IPCR	A01N [I,S]; A01N0025-32 [I,C*]; A01N0025-32 [I,A]; A01N0037-36 [I,C*]; A01N0037-40 [I,A]; A01N0037-44 [I,C*]; A01N0037-44 [I,A]; C07C [I,S]; C07C0065-00 [I,C*]; C07C0065-03 [I,A]; C07C0065-21 [I,A]; C07C0069-00 [I,C*]; C07C0069-017 [I,A]; C07C0069-88 [I,A]; C07C0069-90 [I,A]; C07C0069-92 [I,A]
	ECLA	C07C235/46; A01N025/32; A01N037/40; A01N037/40+M; A01N037/44; C07C065/03; C07C065/21; C07C069/017; C07C069/88; C07C069/90; C07C069/92; C07C243/38;

KR 2006002857 IPCI C07C255/53; C07C255/55  
 A01N0025-32 [I,A]; A01N0037-40 [I,A]; A01N0037-36  
 [I,C\*]; A01N0037-44 [I,A]  
 ECLA A01N025/32; A01N037/40; A01N037/40+M; A01N037/44;  
 C07C065/03; C07C065/21; C07C069/017; C07C069/88;  
 C07C069/90; C07C069/92  
 IN 2005CN02374 IPCI A01N0025-32 [ICM,7]  
 OTHER SOURCE(S): MARPAT 141:273021  
 GRAPHIC IMAGE:



## ABSTRACT:

The aromatic hydroxy compds. I [R1 = carboxy or a carboxy derivative such as CN; R1,R6

= H, halo, SCN, CN or a (un)substituted hydrocarbyl; R3 = H, halo, SCN, Al or B1 if n = 0, and Al, B1 or C1 if n = 1; R4 = H, halo, SCN or CN if m = 0, and A2, B2 or C2 if m = 1; R5 = H, A3 or B3 if o = 0, and A3, B3 or C3 if m = 1; Al, A2, A3 = (un)substituted hydrocarbyl; B1, B2, B3 = acyl; C1, C2, C3 = (un)substituted heterocyclyl; Z, Z1, Z2 = O, SOx or NR7; R7 = (un)substituted hydrocarbyl, acyl, acyloxy, etc.; x = 1 or 2; m,n,o = 0 or 1] or their salts are herbicide safeners.

SUPPL. TERM: arom hydroxy compd herbicide safener

INDEX TERM: Herbicide antidotes

(aromatic hydroxy compds.)

INDEX TERM: 141112-29-0, Isoxaflutole 173159-57-4, Foramsulfuron

ROLE: AGR (Agricultural use); BIOL (Biological study); USES (Uses)

(aromatic hydroxy compds. as safeners for)

INDEX TERM: 530-57-4, 3,5-Dimethoxy-4-hydroxybenzoic acid

1132-21-4, 3,5-Dimethoxybenzoic acid

ROLE: AGR (Agricultural use); BIOL (Biological study); USES (Uses)

(herbicide safener)

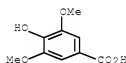
REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD.

- REFERENCE(S):
- (1) Amorab, B; PLANT PHYSIOLOGY AND BIOCHEMISTRY 2002, V40(12), P1051 ZCAPLUS
  - (2) Banas, A; SWEDISH JOURNAL OF AGRICULTURAL RESEARCH V23(2), P67 ZCAPLUS
  - (3) Bartholomeus van, R; WO 8404676 A 1984 ZCAPLUS
  - (4) Bayer Ag; DE 3618004 A 1987 ZCAPLUS
  - (5) Bunn, E; WO 9925191 A 1999 ZCAPLUS
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  - (7) Kosinkiewicz, B; ACTA MICROBIOL POL 1981, V33(2), P103
  - (8) Mersie, W; ENVIRONMENTAL AND EXPERIMENTAL BOTANY 1990, V30(4), P443 ZCAPLUS
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 (11) Thomas, V; US 4321084 A 1982 ZCAPLUS  
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 (14) Xinhua Industry And Trade; CN 1090756 A 1994 ZCAPLUS  
 (15) Zingel, V; EUROPEAN JOURNAL OF MEDICINAL CHEMISTRY 1990, V25(8), P673 ZCAPLUS

IT 530-57-4, 3,5-Dimethoxy-4-hydroxybenzoic acid  
 RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
 (herbicide safener)  
 RN 530-57-4 ZCAPLUS  
 CN Benzoic acid, 4-hydroxy-3,5-dimethoxy- (CA INDEX NAME)



L92 ANSWER 4 OF 27 ZCAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2004:20880 ZCAPLUS Full-text  
 DOCUMENT NUMBER: 140:72561  
 ENTRY DATE: Entered STN: 11 Jan 2004  
 TITLE: High throughput screening of plant growth regulators using phytomixotrophic cells  
 INVENTOR(S): Kwak, Sang-soo; Lee, Haeng-soon; Kwon, Suk-yoon; Kim, Chang-jin; Lee, Hyang-burm; Lee, Sang-han  
 PATENT ASSIGNEE(S): Korea Research Institute of Bioscience and Biotechnology, S. Korea  
 SOURCE: PCT Int. Appl., 46 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 INT. PATENT CLASSIF.:  
 MAIN: C12Q001-02  
 CLASSIFICATION: 5-3 (Agrochemical Bioregulators)  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004003225	A1	20040108	WO 2003-KR1041	20030528 <--
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			

10/810211

KR 2004001352	A	20040107	KR 2002-36512	20020627 <--
AU 2003228117	A1	20040119	AU 2003-228117	20030528 <--
JP 2005530513	T	20051013	JP 2004-517364	20030528 <--
US 20050176584	A1	20050811	US 2005-519511	20050216 <--
PRIORITY APPLN. INFO.:			KR 2002-36512	A 20020627 <--
			WO 2003-KR1041	W 20030528

PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2004003225	ICM	C12Q001-02
	IPCI	C12Q0001-02 [ICM,7]
	IPCR	C12Q0001-02 [I,C*]; C12Q0001-02 [I,A]; G01N0033-50 [I,C*]; G01N0033-50 [I,A]
	ECLA	G01N033/50F; S01N; S01N
KR 2004001352	IPCI	C12Q0001-02 [ICM,7]
	ECLA	G01N033/50F; S01N; S01N
AU 2003228117	IPCI	C12Q0001-02 [ICM,7]
	IPCR	C12Q0001-02 [I,C*]; C12Q0001-02 [I,A]; G01N0033-50 [I,C*]; G01N0033-50 [I,A]
	ECLA	G01N033/50F; S01N; S01N
JP 2005530513	IPCI	C12Q0001-02 [ICM,7]
	IPCR	G01N0033-50 [I,A]; G01N0033-50 [I,C*]
	ECLA	G01N033/50F; S01N; S01N
	FTERM	4B063/QA06; 4B063/QA18; 4B063/QQ09; 4B063/QQ61; 4B063/QR41; 4B063/QR78; 4B063/QX01
US 20050176584	IPCI	A01N0025-00 [ICM,7]; C12Q0001-00 [ICS,7]
	IPCR	C12Q0001-02 [I,C*]; C12Q0001-02 [I,A]; G01N0033-50 [I,C*]; G01N0033-50 [I,A]
	NCL	504/116.100; 435/004.000
	ECLA	G01N033/50F; S01N; S01N

ABSTRACT:

The present invention relates to a method for high throughput screening of plant growth regulator, more particularly to the method comprising; culturing phytomixotrophic cells in a microwell plate in which candidates of plant growth regulator were added, treating 2,3,5-triphenyltetrazolium chloride thereto, reacting thereof by adding ethanol after removing solns. from microwells, transferring the reacting solution into the new microwell plate, and measuring optical d. with a high throughput screening reader. Since the method of the present invention can rapidly and conveniently screen many samples and can also evaluate in vivo activities of plant growth regulators, it can effectively be used as a screening method for plant growth inhibitors and activators.

SUPPL. TERM: plant growth regulator screening phytomixotrophic cell  
Marchantia Nicotiana

INDEX TERM: Actinomycetes  
(culture solution; high-throughput screening of  
plant growth regulators using phytomixotrophic  
cells)

INDEX TERM: Catalpa bignonioides  
Staphylea bumalda  
Viburnum dilatatum  
Viburnum erosum  
(fruit extract; high-throughput screening of plant  
growth regulators using phytomixotrophic cells)

INDEX TERM: Ribes fasciculatum chinense  
(fruit, and trunk extract; high-throughput screening of  
plant growth regulators using phytomixotrophic  
cells)

INDEX TERM: Densitometry (optical)

Drug screening  
 Herbicides  
 (high-throughput screening of plant growth  
 regulators using phytomixotrophic cells)

INDEX TERM: Hormones, plant  
 ROLE: AGR (Agricultural use); BSU (Biological study,  
 unclassified); BIOL (Biological study); USES (Uses)  
 (high-throughput screening of plant growth  
 regulators using phytomixotrophic cells)

INDEX TERM: *Marchantia polymorpha*  
*Nicotiana tabacum*  
 (high-throughput screening of plant growth  
 regulators using phytomixotrophic cells of)

INDEX TERM: *Elaeocarpus sylvestris ellipticus*  
 (leaf extract; high-throughput screening of plant  
 growth regulators using phytomixotrophic cells)

INDEX TERM: *Cayratia japonica*  
*Cocculus trilobus*  
 (leaf, and fruit extract; high-throughput screening of  
 plant growth regulators using phytomixotrophic  
 cells)

INDEX TERM: *Ligustrum japonicum*  
 (leaf, and small branch extract; high-throughput screening  
 of plant growth regulators using  
 phytomixotrophic cells)

INDEX TERM: *Celtis chosieniana*  
*Clerodendrum trichotomum*  
 (leaf, and trunk extract; high-throughput screening of  
 plant growth regulators using phytomixotrophic  
 cells)

INDEX TERM: *Castanopsis cuspidata sieboldii*  
*Ilex integra*  
*Litsea japonica*  
*Quercus gilva*  
 (leaf, trunk heartwood, and trunk bark extract;  
 high-throughput screening of plant growth  
 regulators using phytomixotrophic cells)

INDEX TERM: *Aralia continentalis*  
 (leaf, trunk, and fruit extract; high-throughput screening  
 of plant growth regulators using  
 phytomixotrophic cells)

INDEX TERM: *Carpesium abrotanoides*  
*Valeriana officinalis latifolia*  
 (leaf, trunk, and root extract; high-throughput screening of  
 plant growth regulators using phytomixotrophic  
 cells)

INDEX TERM: *Daphniphyllum macropodium*  
 (leaf, trunk, fruit, and small branch extract;  
 high-throughput screening of plant growth  
 regulators using phytomixotrophic cells)

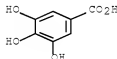
INDEX TERM: Plant cell  
 (phytomixotrophic; high-throughput screening of  
 plant growth regulators using phytomixotrophic  
 cells)

INDEX TERM: *Wasabia koreana*  
 (root extract; high-throughput screening of plant  
 growth regulators using phytomixotrophic cells)

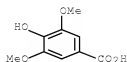
INDEX TERM: *Trichosanthes kirilowii japonica*  
 (seed extract; high-throughput screening of  
 plant growth regulators using phytomixotrophic



cells)  
INDEX TERM: Cinnamomum camphora  
(trunk heartwood, and trunk bark extract; high-throughput  
screening of plant growth regulators using  
phytomixotrophic cells)  
INDEX TERM: 65-85-0, Benzoic acid, biological studies 66-76-2,  
Dicumarol 91-64-5, Coumarin 93-35-6, Umbelliferon  
121-34-6, Vanillic acid 123-31-9, Hydroquinone, biological  
studies 149-91-7, Gallic acid, biological  
studies 330-55-2, Linuron 331-39-5, Caffeic acid  
490-79-9, Gentisic acid 530-57-4, Syringic acid  
583-17-5, o-Coumaric acid 709-98-8, Propanil 1135-24-6,  
Ferulic acid 1912-24-9, Atrazine 3943-89-3,  
Protocatechuic acid, ethyl ester 7169-34-8, 3-Coumaranone  
7400-08-0, [p-Coumaric acid 19666-30-9, Oxadiazon  
32861-85-1, Chlormethoxylinil 52570-16-8, Naproanilide  
71283-80-2 81334-34-1, Imazapyr 83164-33-4, Diflufenican  
93697-74-6, Pyrazosulfuron ethyl 97886-45-8, Dithiopyr  
168088-61-7, Pyribenzoxim 412928-75-7, LGC-42153  
ROLE: AGR (Agricultural use); BSU (Biological  
study, unclassified); BIOL (Biological study); USES (Uses)  
(high-throughput screening of plant growth  
regulators using phytomixotrophic cells)  
INDEX TERM: 298-96-4, 2,3,5-Triphenyltetrazolium chloride  
ROLE: ARU (Analytical role, unclassified); BUU (Biological  
use, unclassified); ANST (Analytical study); BIOL  
(Biological study); USES (Uses)  
(high-throughput screening of plant growth  
regulators using phytomixotrophic cells treated with)  
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS  
RECORD.  
REFERENCE(S): (1) Dalton, C; Biochem Soc Trans 1980, V8(4), P475 ZCAPLUS  
(2) Otero, A; Cytotechnology 1991, V6(2), P137 MEDLINE  
(3) Rich, P; FEMS Microbiol Lett 2001, V202(2), P181 ZCAPLUS  
(4) Sato, F; Plant Cell Rep 1987, V6(6), P401 ZCAPLUS  
IT 149-91-7, Gallic acid, biological studies 530-57-4,  
Syringic acid  
RL: AGR (Agricultural use); BSU (Biological study,  
unclassified); BIOL (Biological study); USES (Uses)  
(high-throughput screening of plant growth regulators using  
phytomixotrophic cells)  
RN 149-91-7 ZCAPLUS  
CN Benzoic acid, 3,4,5-trihydroxy- (CA INDEX NAME)



RN 530-57-4 ZCAPLUS  
CN Benzoic acid, 4-hydroxy-3,5-dimethoxy- (CA INDEX NAME)



L92 ANSWER 5 OF 27 ZCAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2003:814935 ZCAPLUS Full-text  
 DOCUMENT NUMBER: 140:72529  
 ENTRY DATE: Entered STN: 17 Oct 2003  
 TITLE: Phenolic compounds from olive oil mill wastewater  
 against the "tricky germination" of two worst weeds  
 Aliotta, Giovanni; Cafiero, Gennaro; Fiorentino,  
 Antonio  
 AUTHOR(S):  
 CORPORATE SOURCE: Dipartimento di Scienze della Vita, Seconda Universita  
 degli Studi di Napoli, Caserta, 43-81100, Italy  
 SOURCE: Allelopathy (2002), 129-138. Editor(s): Reigosa,  
 Manuel J.; Pedrol, Nuria. Science Publishers, Inc.:  
 Enfield, N. H.  
 CODEN: 69EQJQ; ISBN: 1-57808-254-4  
 DOCUMENT TYPE: Conference  
 LANGUAGE: English  
 CLASSIFICATION: 5-3 (Agrochemical Bioregulators)  
 ABSTRACT:  
 The polluting reverse osmosis fraction of olive oil wastewater was examined for  
 its herbicidal activity against seed germination of two major weeds:  
 redroot pigweed (*Amaranthus retroflexus* L.) and lambsquarter (*Chenopodium album*  
 L.) after the release of the seed dormancy. The reverse osmosis fraction  
 strongly inhibited seed germination of both weeds, while a synthetic fraction  
 prepared from thirteen pure polyphenols isolated from the original active  
 fraction, resulted less active on weed germination. Thus, phytotoxicity could  
 be due to a synergic action of polyphenols with other unidentified substances  
 present in the wastewater. Microscopic observations showed the seed  
 structure of the two weeds and their germination responses in presence and  
 absence of reverse osmosis fraction.  
 SUPPL. TERM: phenol olive oil mill wastewater herbicide pigweed  
 lambsquarter germination; *Amaranthus* *Chenopodium* germination  
 phenol olive oil mill wastewater herbicide  
 INDEX TERM: Olive oil  
 ROLE: MSC (Miscellaneous)  
 (mill wastewater; phenolic compds. from olive oil mill  
 wastewater effect on germination of redroot pigweed and  
 lambsquarter)  
 INDEX TERM: Wastewater  
 (olive oil mill; phenolic compds. from olive oil mill  
 wastewater effect on germination of redroot pigweed and  
 lambsquarter)  
 INDEX TERM: *Amaranthus retroflexus*  
*Chenopodium album*  
 Germination  
 Herbicides  
 Weed control  
 (phenolic compds. from olive oil mill wastewater effect  
 on germination of redroot pigweed and lambsquarter)  
 INDEX TERM: Allelochemicals  
 ROLE: AGR (Agricultural use); BSU (Biological study,

unclassified); BIOL (Biological study); USES (Uses)  
 (phenolic compds. from olive oil mill wastewater effect  
 on germination of redroot pigweed and lambsquarter)

INDEX TERM: Phenols, biological studies  
 ROLE: AGR (Agricultural use); BSU (Biological study,  
 unclassified); BIOL (Biological study); USES (Uses)  
 (polyphenols, nonpolymeric; phenolic compds. from olive  
 oil mill wastewater effect on germination of redroot  
 pigweed and lambsquarter)

INDEX TERM: 99-50-3, Protocatechuic acid 99-96-7, 4-Hydroxybenzoic  
 acid, biological studies 102-32-9,  
 3,4-Dihydroxyphenylacetic acid 120-80-9, Catechol,  
 biological studies 121-34-6, Vanillic acid 156-38-7,  
 4-Hydroxyphenylacetic acid 331-39-5, Caffeic acid  
 501-94-0, Tyrosol 530-57-4,  
 4-Hydroxy-3,5-dimethoxybenzoic acid 530-59-6, Sinapic acid  
 1135-24-6, Ferulic acid 7400-08-0, p-Coumaric acid  
 10597-60-1, 3-Hydroxytyrosol  
 ROLE: AGR (Agricultural use); BSU (Biological  
 study, unclassified); BIOL (Biological study); USES (Uses)  
 (phenolic compds. from olive oil mill wastewater effect  
 on germination of redroot pigweed and lambsquarter)

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1  
 CITINGS)

DATE LAST CITED: Date last citing reference entered STN: 16 Feb 2009

OS.CITING.REFS: CAPLUS 2005:526740

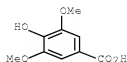
REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD.

REFERENCE(S): (1) Aliotta, G; Allelopathy J 1996, V3, P207  
 (2) Aliotta, G; Allelopathy J (in press) 2001  
 (3) Aliotta, G; Current Topics in Phytochemistry 2000, V3,  
 P167 ZCAPLUS  
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 Plant Growth Regulator Society of America 1995,  
 V93 -97  
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 (9) Duke, S; Weed Technology 1987, V1, P122 ZCAPLUS  
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 (11) Inderjit; Bot Rev 1995, V61, P28  
 (12) Inderjit; Bot Rev 1996, V62, P186  
 (13) Leather, G; The Science of Allelopathy 1986  
 (14) Leck, M; Ecology of soil seed bank 1989  
 (15) Narwal, S; Allelopathy in agriculture and forestry 1994  
 (16) Rice, E; Allelopathy (Ed 2) 1984  
 (17) Waller, G; ACS Symposium 1987  
 (18) Zimdahl, R; The fundamentals of weed science 1993  
 (19) Zohary, D; Science 1975, V187, P319

IT 530-57-4, 4-Hydroxy-3,5-dimethoxybenzoic acid  
 RL: AGR (Agricultural use); BSU (Biological study,  
 unclassified); BIOL (Biological study); USES (Uses)  
 (phenolic compds. from olive oil mill wastewater effect on germination  
 of redroot pigweed and lambsquarter)

RN 530-57-4 ZCAPLUS

CN Benzoic acid, 4-hydroxy-3,5-dimethoxy- (CA INDEX NAME)



L92 ANSWER 6 OF 27 ZCAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2003:271589 ZCAPLUS Full-text  
 DOCUMENT NUMBER: 138:288664  
 ENTRY DATE: Entered STN: 09 Apr 2003  
 TITLE: Water-soluble films for packaging of chlorine compounds  
 INVENTOR(S): Higasa, Shintaro; Fujiwara, Naoki; Isosaki, Takanori  
 PATENT ASSIGNEE(S): Kuraray Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 INT. PATENT CLASSIF.:  
 MAIN: B65D065-46  
 SECONDARY: C08F008-12; C08F216-06; C08J005-18; C08K005-09;  
 C08K005-13; C08L029-04; C08F226-00; C08L001-00  
 CLASSIFICATION: 38-3 (Plastics Fabrication and Uses)  
 Section cross-reference(s): 5, 61  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003104435	A	20030409	JP 2001-302359	20010928 <--
			JP 2001-302359	20010928 <--

PRIORITY APPLN. INFO.:  
 PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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	ICS	C08F008-12; C08F216-06; C08J005-18; C08K005-09; C08K005-13; C08L029-04; C08F226-00; C08L001-00
	IPCI	B65D065-46 [ICM,7]; C08F0008-12 [ICS,7]; C08F0008-00 [ICS,7,C*]; C08F0216-06 [ICS,7]; C08F0216-00 [ICS,7,C*]; C08J0005-18 [ICS,7]; C08K0005-09 [ICS,7]; C08K0005-13 [ICS,7]; C08K0005-00 [ICS,7,C*]; C08L0029-04 [ICS,7]; C08L0029-00 [ICS,7,C*]; C08F0226-00 [ICS,7]; C08L0001-00 [ICS,7]
	IPCR	B65D065-46 [I,C*]; B65D065-46 [I,A]; C08F0008-00 [I,C*]; C08F0008-12 [I,A]; C08F0216-00 [I,C*]; C08F0216-06 [I,A]; C08J0005-18 [I,C*]; C08J0005-18 [I,A]; C08K0005-00 [I,C*]; C08K0005-09 [I,A]; C08K0005-13 [I,A]; C08L0029-00 [I,C*]; C08L0029-04 [I,A]; C08L0101-00 [I,C*]; C08L0101-16 [I,A]

## ABSTRACT:

The films for packaging of Cl compds. such as pesticides and antimicrobial agents, comprise modified vinyl alc. polymers having 1-10 mol% N-vinylamide monomer units and optionally contain carbohydrates, gallic acid or its Cl-5 alkyl esters, and reducing hydroxycarboxylic acids or their salts. Thus, a film comprising saponified vinyl acetate-N-vinylcaprolactam copolymer (N-vinylcaprolactam unit content 6.0 mol%) 100, glycerin 15, etherified starch 10, Pr gallate 1.0, citric acid 0.8, and talc 5 parts showed Young's modulus

10/810211

2.2 kg/mm2, tensile strength 2.0 kg/cm2, and good chemical resistance (against trichloroisocyanuric acid) and dissolved in H2O at 20° within 14 s.

SUPPL. TERM: water soluble film modified polyvinyl alc; saponid vinyl acetate vinylcaprolactam copolymer film; chlorine pesticide packaging water soluble film; chem resistance water soluble packaging film; chloroisocyanurate antimicrobial packaging film polyvinyl alc; carbohydrate vinyl alc polymer packaging film; gallate vinyl alc polymer packaging film; hydroxycarboxylate vinyl alc polymer packaging film

INDEX TERM: Carbohydrates, uses  
ROLE: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)  
(additive for improved water solubility; chemical resistant water-soluble vinyl alc.-vinylamide copolymer films for packaging of Cl compds.)

INDEX TERM: Chemically resistant materials  
Plastic films  
(chemical resistant water-soluble vinyl alc.-vinylamide copolymer films for packaging of Cl compds.)

INDEX TERM: Water purification  
(chlorination; chemical resistant water-soluble vinyl alc.-vinylamide copolymer films for packaging of Cl compds.)

INDEX TERM: Swimming pools  
(chlorine-containing antimicrobial agents; chemical resistant water-soluble vinyl alc.-vinylamide copolymer films for packaging of Cl compds.)

INDEX TERM: Antibacterial agents  
Antimicrobial agents  
Pesticides  
(chlorine-containing; chemical resistant water-soluble vinyl alc.-vinylamide copolymer films for packaging of Cl compds.)

INDEX TERM: Packaging materials  
(films; chemical resistant water-soluble vinyl alc.-vinylamide copolymer films for packaging of Cl compds.)

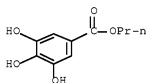
vinylamide

INDEX TERM: Carboxylic acids, uses  
ROLE: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)  
(hydroxy, additive for improved water solubility; chemical resistant water-soluble vinyl alc.-vinylamide copolymer films for packaging of Cl compds.)

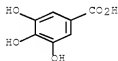
INDEX TERM: Water purification  
(sterilization and disinfection; chemical resistant water-soluble vinyl alc.-vinylamide copolymer films for packaging of Cl compds.)

INDEX TERM: 50-81-7, L-Ascorbic acid, uses 77-92-9, Citric acid, uses 87-69-4, Tartaric acid, uses 99-20-7, Trehalose 121-79-9, Propyl gallate 149-91-7, Gallic acid, uses 831-61-8, Ethyl gallate 6915-15-7, Malic acid 9005-25-8, Corn starch, uses 9005-25-8D, Starch, ether or oxidized 66230-82-8, MS 3800  
ROLE: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)  
(additive for improved water solubility; chemical resistant water-soluble vinyl alc.-vinylamide copolymer films for

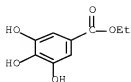
packaging of Cl compds.)  
 INDEX TERM: 87-90-1, Trichloroisocyanuric acid  
 ROLE: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
 (antimicrobial agent; chemical resistant water-soluble vinyl alc.-vinylamide copolymer films for packaging of Cl compds.)  
 INDEX TERM: 25086-89-9DP, Vinyl acetate-N-vinyl-2-pyrrolidone copolymer, saponified 27399-70-8DP, Vinyl acetate-N-vinylcaprolactam copolymer, saponified 28928-24-7DP, saponified 80512-26-1DP, N-Vinylacetamide-vinyl acetate copolymer, saponified 108941-57-7DP, Vinyl acetate-N-vinylformamide copolymer, saponified  
 ROLE: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (chemical resistant water-soluble vinyl alc.-vinylamide copolymer films for packaging of Cl compds.)  
 IT 121-79-9, Propyl gallate 149-91-7, Gallic acid, uses  
 831-61-8, Ethyl gallate  
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)  
 (additive for improved water solubility; chemical resistant water-soluble vinyl alc.-vinylamide copolymer films for packaging of Cl compds.)  
 RN 121-79-9 ZCAPLUS  
 CN Benzoic acid, 3,4,5-trihydroxy-, propyl ester (CA INDEX NAME)



RN 149-91-7 ZCAPLUS  
 CN Benzoic acid, 3,4,5-trihydroxy- (CA INDEX NAME)



RN 831-61-8 ZCAPLUS  
 CN Benzoic acid, 3,4,5-trihydroxy-, ethyl ester (CA INDEX NAME)



L92 ANSWER 7 OF 27 ZCAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2003:254147 ZCAPLUS Full-text  
 DOCUMENT NUMBER: 138:267220  
 ENTRY DATE: Entered STN: 02 Apr 2003  
 TITLE: Shelf-stable, virulent preparation containing  
 Agrobacterium cells, an acidulant and a phenolic  
 compound  
 INVENTOR(S): Sinnott, Robert A.  
 PATENT ASSIGNEE(S): USA  
 SOURCE: U.S., 5 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 INT. PATENT CLASSIF.:  
 MAIN: A01N025-00  
 SECONDARY: A01N063-00; C12N001-00; C12N001-12; C12N001-20  
 US PATENT CLASSIF.: 424093400; 424405000; 435252100; 435822000  
 CLASSIFICATION: 5-6 (Agrochemical Bioregulators)  
 Section cross-reference(s): 10  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6540997	B1	20030401	US 2000-491158	20000126 <--
			US 1999-117460P	P 19990126 <--

## PRIORITY APPLN. INFO.:

## PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 6540997	ICM	A01N025-00
	ICS	A01N063-00; C12N001-00; C12N001-12; C12N001-20
	INCL	424093400; 424405000; 435252100; 435822000
	IPCI	A01N0025-00 [ICM,7]; A01N0063-00 [ICS,7]; C12N0001-00 [ICS,7]; C12N0001-12 [ICS,7]; C12N0001-20 [ICS,7]
	IPCR	A01N0063-00 [I,C*]; A01N0063-00 [I,A]
	NCL	424/093.400; 424/405.000; 435/252.100; 435/822.000
	ECLA	A01N063/00+M

## ABSTRACT:

A virulent preparation of *Agrobacterium* cells, includes *Agrobacterium* cells, an acidulant, and a phenolic compound that is preferably Et vanillin. The preparation is shelf stable at ambient temperature for several months. The preparation may further contain a dry excipient material, a food coloring agent, a flow agent, a plant hormone, a bacterial growth promoter and an antifungal agent.

SUPPL. TERM: Agrobacterium acidulant phenolic formulation stability  
 INDEX TERM: Food

(dyes; in shelf-stable, virulent preparation containing Agrobacterium cells, acidulant and phenolic compound)

INDEX TERM: Dyes  
(food; in shelf-stable, virulent preparation containing Agrobacterium cells, acidulant and phenolic compound)

INDEX TERM: Fungicides  
Solvents  
(in shelf-stable, virulent preparation containing Agrobacterium cells, acidulant and phenolic compound)

INDEX TERM: Hormones, microbial  
ROLE: AGR (Agricultural use); ARG (Analytical reagent use); ANST (Analytical study); BIOL (Biological study); USES (Uses)  
(in shelf-stable, virulent preparation containing Agrobacterium cells, acidulant and phenolic compound)

INDEX TERM: Hormones, plant  
ROLE: AGR (Agricultural use); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)  
(in shelf-stable, virulent preparation containing Agrobacterium cells, acidulant and phenolic compound)

INDEX TERM: Agrobacterium  
Agrochemical formulations  
Stability  
(shelf-stable, virulent preparation containing Agrobacterium cells, acidulant and phenolic compound)

INDEX TERM: Flavonoids  
Lignans  
Phenols, biological studies  
ROLE: AGR (Agricultural use); MOA (Modifier or additive use); BIOL (Biological study); USES (Uses)  
(shelf-stable, virulent preparation containing Agrobacterium cells, acidulant and phenolic compound)

INDEX TERM: 99-96-7, p-Hydroxybenzoic acid, biological studies  
121-32-4, Ethyl vanillin 121-33-5, Vanillin 134-96-3, Syringaldehyde 458-35-5, Coniferyl alcohol  
530-57-4, Syringic acid 530-59-6, Sinapic acid  
537-33-7, Sinapyl alcohol 1080-12-2, Vanillalacetone  
1135-24-6, Ferulic acid 2041-35-2, 5-Hydroxyferulic acid methyl ester 2309-07-1, Ferulic acid methyl ester  
2478-38-8, Acetosyringone 7558-80-7, Sodium dihydrogen phosphate 9005-53-2, Lignin, biological studies  
20733-94-2, Sinapic acid methyl ester  
ROLE: AGR (Agricultural use); MOA (Modifier or additive use); BIOL (Biological study); USES (Uses)  
(shelf-stable, virulent preparation containing Agrobacterium cells, acidulant and phenolic compound)

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD.

REFERENCE(S): (1) Chapple; US 5981837 A 1999 ZCAPLUS  
(2) Emerson; US 6251951 B1 2001 ZCAPLUS  
(3) Michelsen; US 6143543 A 2000 ZCAPLUS

IT 530-57-4, Syringic acid

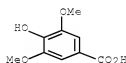


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RL: AGR (Agricultural use); MOA (Modifier or additive use); BIOL  
(Biological study); USES (Uses)  
(shelf-stable, virulent preparation containing Agrobacterium cells,  
acidulant and phenolic compound)

RN 530-57-4 ZCAPLUS

CN Benzoic acid, 4-hydroxy-3,5-dimethoxy- (CA INDEX NAME)



L92 ANSWER 8 OF 27 ZCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2003:174533 ZCAPLUS Full-text

DOCUMENT NUMBER: 138:182064

ENTRY DATE: Entered STN: 07 Mar 2003

TITLE: Transformation of soybeans by pretreatment with  
cytokinin and regeneration of embryonic explants of  
soybean seed on porous substrates in presence of  
vir-inducing phenol compound  
Dias, Kalyani Mallika

INVENTOR(S): USA

PATENT ASSIGNEE(S): USA

SOURCE: U.S. Pat. Appl. Publ., 7 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

INT. PATENT CLASSIF.:

MAIN: C12N015-82

SECONDARY: C12N015-87; A01H005-00; C12N015-84

US PATENT CLASSIF.: 800294000; 800312000; 800292000; 800293000; 435469000;  
435470000

CLASSIFICATION: 3-2 (Biochemical Genetics)

Section cross-reference(s): 11

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20030046733	A1	20030306	US 2001-948292	20010906 <--
			US 2001-948292	20010906 <--

PRIORITY APPLN. INFO.:

PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 20030046733	ICM	C12N015-82
	ICS	C12N015-87; A01H005-00; C12N015-84
	INCL	800294000; 800312000; 800292000; 800293000; 435469000; 435470000
	IPCI	C12N0015-82 [ICM,7]; C12N0015-87 [ICS,7]; A01H005-00 [ICS,7]; C12N0015-84 [ICS,7]
	IPCR	C12N0015-82 [I,C*]; C12N0015-82 [I,A]; C12N0015-84 [I,C*]; C12N0015-84 [I,A]
	NCL	800/294.000; 435/469.000; 435/470.000; 800/292.000; 800/293.000; 800/312.000
	ECLA	C12N015/82A4B

ABSTRACT:

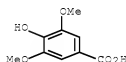
10/810211

Soybean are transformed by inserting a functional gene into an explant of a soybean (particularly after being pre-treated with high doses of cytokinin (6-BAP)), transferring embryonic axes explants of the mature soybean seeds incubated on wet filter papers in the presence of at least one phenol compound naturally produced when plant cells have been wounded, to induce vir genes, and incubated in the dark in such presence at 20-25° for >24 h. After incubation, the explants are transferred to a media to develop shoots from explants, control Agrobacterium growth, and after shoot elongation, separated shoots, with or without roots, are either transferred to soil, or contacted with at least 1 mg/L IBA before transplant.

SUPPL. TERM: soybean transformation regeneration cytokinin culture  
INDEX TERM: Antibiotics  
Herbicides  
(selection agent; transformation of soybeans by pretreatment with cytokinin and regeneration of embryonic explants of soybean seed on porous substrates in presence of vir-inducing phenol compound)  
INDEX TERM: Agrobacterium  
Electroporation  
Glycine max  
Microprojectile bombardment  
Plant tissue culture  
Regeneration, plant  
Transformation, genetic  
(transformation of soybeans by pretreatment with cytokinin and regeneration of embryonic explants of soybean seed on porous substrates in presence of vir-inducing phenol compound)  
INDEX TERM: Chimeric gene  
Cytokinins  
Hormones, plant  
Phenols, biological studies  
ROLE: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
(transformation of soybeans by pretreatment with cytokinin and regeneration of embryonic explants of soybean seed on porous substrates in presence of vir-inducing phenol compound)  
INDEX TERM: Gene, microbial  
ROLE: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
(vir, induction during regeneration; transformation of soybeans by pretreatment with cytokinin and regeneration of embryonic explants of soybean seed on porous substrates in presence of vir-inducing phenol compound)  
INDEX TERM: 1071-83-6, Glyphosate 6379-56-2, Hygromycin 8063-07-8, Kanamycin 35597-43-4, Bialaphos  
ROLE: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
(selection agent; transformation of soybeans by pretreatment with cytokinin and regeneration of embryonic explants of soybean seed on porous substrates in presence of vir-inducing phenol compound)  
INDEX TERM: 134-96-3, Syringaldehyde 498-02-2, Acetovanillone

530-57-4, Syringic acid 530-59-6, Sinapic acid  
 2478-38-8, Acetosyringone 90426-22-5,  
 $\alpha$ -Hydroxyacetosyringone  
 ROLE: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
 (signal compound in porous paper support medium;  
 transformation of soybeans by pretreatment with  
 cytokinin and regeneration of embryonic explants  
 of soybean seed on porous substrates  
 in presence of vir-inducing phenol compound)  
 87-51-4, IAA, biological studies 1214-39-7,  
 6-Benzylaminopurine  
 ROLE: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
 (transformation of soybeans by pretreatment  
 with cytokinin and regeneration of embryonic  
 explants of soybean seed on  
 porous substrates in presence of vir-inducing phenol  
 compound)

IT 530-57-4, Syringic acid  
 RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
 (signal compound in porous paper support medium; transformation of  
 soybeans by pretreatment with cytokinin and regeneration of  
 embryonic explants of soybean seed on  
 porous substrates in presence of vir-inducing phenol compound)  
 RN 530-57-4 ZCAPLUS  
 CN Benzoic acid, 4-hydroxy-3,5-dimethoxy- (CA INDEX NAME)



L92 ANSWER 9 OF 27 ZCAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2002:917188 ZCAPLUS Full-text  
 DOCUMENT NUMBER: 138:91292  
 ENTRY DATE: Entered STN: 04 Dec 2002  
 TITLE: Antimicrobial cotton cloth utilizing chemicals of  
 plant origin. Antibacterial action of the cotton  
 cloth fixed with tannic acid  
 AUTHOR(S): Fukuda, Fumie; Yamaguchi, Haruhiko; Higuchi, Mitsuo  
 CORPORATE SOURCE: Lab. Polymer Sci. Forest Resour., Div. Bioprod.  
 Biotechnol., Sci., Dep. Forest Forest Prod. Sci., Fac.  
 Agric., Kyushu Univ., Fukuoka, 812-8581, Japan  
 SOURCE: Gakugei Zasshi - Kyushu Daigaku Daigakuin Nogaku  
 Kenkyuin (2002), 56(2), 153-161  
 CODEN: GZKDBV  
 PUBLISHER: Kyushu Daigaku Daigakuin Nogaku Kenkyuin  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Japanese  
 CLASSIFICATION: 40-9 (Textiles and Fibers)  
 Section cross-reference(s): 5  
 ABSTRACT:

10/810211

In our previous paper, aminoethylated cotton cloth fixed with tannic acid was reported to have a high antibacterial activity against *Escherichia coli* W3110 and *Staphylococcus aureus* IF013276. In this paper, the results of the expts. carried out to investigate the mechanisms of the antibacterial action of the tannic acid-modified cotton cloth are described. Antibacterial activities of model compds. having different nos. of phenolic hydroxyl group were evaluated against *E. coli* W3110 and *S. aureus* IF013276. It was found that the value of min. inhibitory concentration (MIC) of the model compound decreased with an increase in the number of phenolic OH in a mol. It was also found that the model compound having a CO<sub>2</sub>H group had a greater MIC than the corresponding model compound having no CO<sub>2</sub>H did. Thus, the antibacterial activities of phenolic compds. were ascribed to their phenolic OH. Aminoethylated cotton cloths fixed with model compds. having different nos. of phenolic OH and CO<sub>2</sub>H showed antibacterial activities. In this case, too, the activity increased with an increase in the number of OH in the model compound fixed. As no distinct halo was observed in the culture-tests of the both bacteria the phenolic compds. were considered to have antibacterial activities in the state of being fixed on the cotton cloth.

SUPPL. TERM: antimicrobial cotton cloth tannic acid action; phenolic hydroxy group antibacterial cotton cloth

INDEX TERM: Antibacterial agents  
(antibacterial action of cotton cloth fixed with tannic acid)

INDEX TERM: Tannins  
ROLE: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
(antibacterial action of cotton cloth fixed with tannic acid)

INDEX TERM: Structure-activity relationship  
(bactericidal; antibacterial action of cotton cloth fixed with tannic acid)

INDEX TERM: Textiles  
(cotton; antibacterial action of cotton cloth fixed with tannic acid)

INDEX TERM: Phenols, biological studies  
ROLE: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
(model compds. for tannic acid; antibacterial action of cotton cloth fixed with tannic acid)

INDEX TERM: Hydroxyl group  
(phenolic, antibacterial activity in relation to; antibacterial action of cotton cloth fixed with tannic acid)

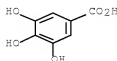
INDEX TERM: 87-66-1, 1,2,3-Benzenetriol 89-86-1,  $\beta$ -Resorcylic acid 99-96-7, p-Hydroxybenzoic acid, biological studies 108-46-3, Resorcinol, biological studies 108-95-2, Phenol, biological studies 120-80-9, Catechol, biological studies 149-91-7, Gallic acid, biological studies 331-39-5  
ROLE: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
(model compound for tannic acid; antibacterial action of cotton cloth fixed with tannic acid)

IT 149-91-7, Gallic acid, biological studies  
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
(model compound for tannic acid; antibacterial action of cotton cloth fixed with tannic acid)

10/810211

RN 149-91-7 ZCAPLUS

CN Benzoic acid, 3,4,5-trihydroxy- (CA INDEX NAME)



L92 ANSWER 10 OF 27 ZCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2002:914294 ZCAPLUS [Full-text](#)

DOCUMENT NUMBER: 138:282742

ENTRY DATE: Entered STN: 03 Dec 2002

TITLE: Allelopathic action of exometabolites of *Tagetes* L. species on the growth and development of quack-grass  
AUTHOR(S): Mashkovs'ka, S. P.; Didik, N. P.; Brechko, V. L.  
CORPORATE SOURCE: Nats. Bot. Sad im. M. M. Grishka, NAN Ukr., Kiev, 01014, Ukraine

SOURCE: Fiziologiya i Biokhimiya Kul'turnykh Rastenii (2002), 34(5), 437-442  
CODEN: FBKRAT; ISSN: 0532-9310

Izdatel'stvo "Logos"

PUBLISHER: Journal

DOCUMENT TYPE: Ukrainian

LANGUAGE: 5-3 (Agrochemical Bioregulators)

CLASSIFICATION:

ABSTRACT: The influence of water-soluble, volatile allelochemicals of some marigold species (*Tagetes* L.), as well as decay products of their residues on quack-grass (*Elytrigia repens* (L.) Nevski) was studied. It was found that plant residues, phenolic acids, volatile oils of *Tagetes* species have an inhibitory effect on the growth and development of quack-grass. Exudates of *T. signata* and *T. lucida* were shown to be promising for allelopathic control of *E. repens* in agroecosystems.

SUPPL. TERM: *Tagetes* exometabolite allelopathy *Elytrigia* herbicide

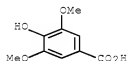
INDEX TERM: Allelopathy  
*Elytrigia repens*  
Herbicides  
*Tagetes*  
*Tagetes lucida*  
*Tagetes patula*  
*Tagetes tenuifolia*  
(allelopathic action of exometabolites of *Tagetes* species on growth and development of quack-grass)

INDEX TERM: Allelochemicals  
ROLE: AGR (Agricultural use); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)  
(allelopathic action of exometabolites of *Tagetes* species on growth and development of quack-grass)

INDEX TERM: 99-96-7, biological studies 121-34-6, Vanillic acid  
303-07-1,  $\gamma$ -Resorcylic acid 331-39-5, Caffeic acid  
530-57-4, Syringic acid 1135-24-6, Ferulic acid  
7400-08-0, p-Cumalic acid  
ROLE: AGR (Agricultural use); BSU (Biological study, unclassified); OCU (Occurrence, unclassified); BIOL

(Biological study); OCCU (Occurrence); USES (Uses)  
 (allelopathic action on growth and development of  
 quack-grass of exometabolites of Tagetes species, containing)

IT 530-57-4, Syringic acid  
 RL: AGR (Agricultural use); BSU (Biological study,  
 unclassified); OCU (Occurrence, unclassified); BIOL (Biological study);  
 OCCU (Occurrence); USES (Uses)  
 (allelopathic action on growth and development of quack-grass of  
 exometabolites of Tagetes species, containing)  
 RN 530-57-4 ZCAPLUS  
 CN Benzoic acid, 4-hydroxy-3,5-dimethoxy- (CA INDEX NAME)



L92 ANSWER 11 OF 27 ZCAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2002:204969 ZCAPLUS Full-text  
 DOCUMENT NUMBER: 136:215855  
 ENTRY DATE: Entered STN: 19 Mar 2002  
 TITLE: Preservatives for and preservation of agricultural  
 and horticultural products  
 INVENTOR(S): Iijima, Yoshihiko; Fukushima, Kenji; Nakamura, Michie  
 PATENT ASSIGNEE(S): Dainichiseika Color and Chemical Mfg. Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 INT. PATENT CLASSIF.:  
 MAIN: A01N003-00  
 SECONDARY: A01N003-02; A23B007-148; A23L003-3508; A23L003-358  
 CLASSIFICATION: 17-6 (Food and Feed Chemistry)  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002080301	A	20020319	JP 2000-239548	20000808 <--
JP 4077145	B2	20080416		
KR 2005081181	A	20050818	KR 2005-54911	20050624 <--
JP 2005304507	A	20051104	JP 2005-196319	20050705 <--
JP 4077470	B2	20080416		
PRIORITY APPLN. INFO.:			JP 1999-257261	A 19990910 <--
			JP 1999-257262	A 19990910 <--
			JP 2000-109509	A 20000411 <--
			JP 2000-109510	A 20000411 <--
			JP 2000-109511	A 20000411 <--
			JP 2000-206952	A 20000707 <--
			JP 2000-239548	A3 20000808 <--
			KR 2000-53423	A3 20000908 <--

## PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002080301	ICM	A01N003-00

ICS A01N003-02; A23B007-148; A23L003-3508; A23L003-358  
 IPCI A01N0003-00 [I,A]; A01N0003-02 [I,A]; A01P0003-00 [I,A]; A01N0037-06 [I,A]; A01N0037-10 [I,A]; A01N0037-38 [I,A]; A01N0037-40 [I,A]; A01N0037-36 [I,C\*]; A01N0057-20 [I,A]; A01N0057-00 [I,C\*]; A23B0007-148 [I,A]; A23B0007-144 [I,C\*]; A23L0003-3508 [I,A]; A23L0003-3463 [I,C\*]; A23L0003-358 [I,A]; A23L0003-3454 [I,C\*]  
 IPCR A23L0003-3463 [I,C\*]; A23L0003-3508 [I,A]; A01N0003-00 [I,C\*]; A01N0003-00 [I,A]; A01N0003-02 [I,A]; A23B0007-144 [I,C\*]; A23B0007-148 [I,A]; A23L0003-3454 [I,C\*]; A23L0003-358 [I,A]; A01N0037-06 [I,C]; A01N0037-06 [I,A]; A01N0037-10 [I,C]; A01N0037-10 [I,A]; A01N0037-36 [I,C]; A01N0037-38 [I,A]; A01N0037-40 [I,A]; A01N0057-00 [I,C]; A01N0057-20 [I,A]; A01P0003-00 [I,C]; A01P0003-00 [I,A]  
 KR 2005081181 IPCI A23B0007-144 [ICM,7]  
 ECLA A23B007/10; A23B007/144; A23B007/154; A23B007/157; A23B009/18; A23B009/26; A23B009/30  
 JP 2005304507 IPCI A01N0003-00 [I,A]; A01N0003-02 [I,A]; A01P0003-00 [I,A]; A01N0037-06 [I,A]; A01N0037-10 [I,A]; A01N0037-38 [I,A]; A01N0037-40 [I,A]; A01N0037-36 [I,C\*]; A01N0057-20 [I,A]; A01N0057-00 [I,C\*]; A23B0007-148 [I,A]; A23B0007-144 [I,C\*]; A23L0003-3508 [I,A]; A23L0003-3463 [I,C\*]; A23L0003-358 [I,A]; A23L0003-3454 [I,C\*]  
 IPCR A01N0003-00 [I,C]; A01N0003-00 [I,A]; A23B0007-144 [I,C\*]; A23B0007-148 [I,A]; A01N0003-02 [I,A]; A01N0037-06 [I,C]; A01N0037-06 [I,A]; A01N0037-10 [I,C]; A01N0037-10 [I,A]; A01N0037-36 [I,C]; A01N0037-38 [I,A]; A01N0037-40 [I,A]; A01N0057-00 [I,C]; A01P0003-00 [I,C]; A01P0003-00 [I,A]; A23L0003-3454 [I,C]; A23L0003-3463 [I,C]; A23L0003-3508 [I,A]; A23L0003-358 [I,A]  
 FTERM 4B069/HA01; 4B069/HA11; 4B069/KA03; 4B069/KA07; 4B069/KA10; 4B069/KB04; 4B069/KC13; 4B069/KC24; 4B069/KD02; 4H011/BB06; 4H011/BB09; 4H011/BB18; 4H011/BB19; 4H011/CA04; 4H011/CB10; 4H011/CD03; 4H011/DH02

## ABSTRACT:

The preservatives (I) are useful for sustained supply of CO<sub>2</sub> and inhibition of ethylene formation in the atmospheric of the agricultural and horticultural products. I comprises carboxylic acids and bicarbonate salt.

SUPPL. TERM: bicarbonate carbon dioxide agricultural horticultural product preservation  
 INDEX TERM: Polymers, biological studies  
 ROLE: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
 (acidic group-containing; preservatives for and preservation of agricultural and horticultural products)  
 INDEX TERM: Carboxyl group  
 (polymers containing; preservatives for and preservation of agricultural and horticultural products)  
 INDEX TERM: Controlled atmospheres  
 Crop (plant)  
 Food preservation  
 Food preservatives  
 Malus pumila  
 Phosphate group

(preservatives for and preservation of  
agricultural and horticultural products)

INDEX TERM: Bicarbonates  
Carboxylic acids, biological studies  
ROLE: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
(preservatives for and preservation of  
agricultural and horticultural products)

INDEX TERM: Functional groups  
(sulfate, polymers containing; preservatives for and  
preservation of agricultural and horticultural  
products)

INDEX TERM: Functional groups  
(sulfonate group, polymers containing; preservatives for and  
preservation of agricultural and horticultural  
products)

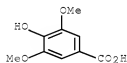
INDEX TERM: 56-86-0, Glutamic acid, biological studies 59-67-6,  
Nicotinic acid, biological studies 65-85-0, Benzoic acid,  
biological studies 68-04-2, Trisodium citrate 69-72-7,  
Salicylic acid, biological studies 77-92-9, Citric acid,  
biological studies 97-65-4, Itaconic acid, biological  
studies 110-44-1, Sorbic acid 112-38-9, Undecylenic acid  
121-34-6, Vanillic acid 124-04-9, Adipic acid, biological  
studies 124-38-9, Carbon dioxide, biological studies  
144-55-8, Sodium bicarbonate, biological studies 331-39-5,  
Caffeic acid 530-57-4, Syringic acid 621-82-9,  
Cinnamic acid, biological studies 1135-24-6, Ferulic acid  
7400-08-0, p-Cumaric acid 18996-35-5, Monosodium citrate  
ROLE: AGR (Agricultural use); BIOL (Biological  
study); USES (Uses)  
(preservatives for and preservation of  
agricultural and horticultural products)

INDEX TERM: 74-85-1, Ethylene, biological studies  
ROLE: BSU (Biological study, unclassified); BIOL (Biological  
study)  
(preservatives for and preservation of  
agricultural and horticultural products)

IT 530-57-4, Syringic acid  
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
(preservatives for and preservation of agricultural and  
horticultural products)

RN 530-57-4 ZCAPLUS

CN Benzoic acid, 4-hydroxy-3,5-dimethoxy- (CA INDEX NAME)



L92 ANSWER 12 OF 27 ZCAPLUS COPYRIGHT 2009 ACS on STN  
ACCESSION NUMBER: 2002:51614 ZCAPLUS Full-text  
DOCUMENT NUMBER: 136:114778  
ENTRY DATE: Entered STN: 18 Jan 2002  
TITLE: Cloning, sequencing and characterization of  
Arabidopsis sinapoylglucose-malate sinapoyltransferase



and its use in the manipulation of plant secondary metabolism

INVENTOR(S): Chapple, Clinton C. S.  
 PATENT ASSIGNEE(S): Purdue Research Foundation, USA  
 SOURCE: PCT Int. Appl., 90 pp.  
 CODEN: PIXXD2

DOCUMENT TYPE: Patent  
 LANGUAGE: English

INT. PATENT CLASSIF.:  
 MAIN: C12N009-00  
 CLASSIFICATION: 7-5 (Enzymes)  
 Section cross-reference(s): 3, 5, 11, 16

FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002004614	A2	20020117	WO 2001-US21549	20010709 <--
WO 2002004614	A3	20020808		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
US 20020026658	A1	20020228	US 2001-901252	20010709 <--
PRIORITY APPLN. INFO.:			US 2000-216593P	P 20000707 <--
PATENT CLASSIFICATION CODES:				
PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES		
WO 2002004614	ICM	C12N009-00		
	IPCI	C12N0009-00 [ICM,7]		
	IPCR	C07K0014-415 [I,C*]; C07K0014-415 [I,A]; C12N0009-10 [I,C*]; C12N0009-10 [I,A]; C12N0015-54 [I,C*]; C12N0015-54 [I,A]; C12N0015-82 [I,C*]; C12N0015-82 [I,A]		
	ECLA	C07K014/415; C12N009/10C1A; C12N015/82C4B; C12N015/82C4B12; C12N015/82C8B; C12N015/82C8B6E; K01K; M12N		
US 20020026658	IPCI	A01H0005-00 [ICM,7]; C12N0015-82 [ICS,7]; C12N0015-29 [ICS,7]; C12N0015-62 [ICS,7]		
	IPCR	C07K0014-415 [I,C*]; C07K0014-415 [I,A]; C12N0009-10 [I,C*]; C12N0009-10 [I,A]; C12N0015-82 [I,C*]; C12N0015-82 [I,A]		
	NCL	800/281.000; 435/069.800; 536/023.600; 800/278.000; 800/302.000		
	ECLA	C07K014/415; C12N009/10C1A; C12N015/82C4B; C12N015/82C4B12; C12N015/82C8B6E; K01K; M12N		

## ABSTRACT:

A gene SNG1 has been isolated from Arabidopsis encoding sinapoylglucose-malate sinapoyltransferase (SMT). Isolation, cloning, sequencing and characterization of SNG1 are disclosed. The cDNA sequence and the encoded amino acid sequence of SMT are provided. SMT is responsible for the substitution of a glucose moiety on sinapoylglucose with a malate moiety to form sinapoylmalate in plant vacuoles. The enzyme is useful for the manipulation of plant secondary metabolism

10/810211

SUPPL. TERM: Arabidopsis gene SNG1 sinapoylglucose malate  
sinapoyltransferase cDNA sequence; plant secondary metab  
sinapoylglucose malate sinapoyltransferase Arabidopsis

INDEX TERM: Solar UV radiation  
(B, altering plant resistance to; cloning,  
sequencing and characterization of Arabidopsis  
sinapoylglucose-malate sinapoyltransferase and its use in  
manipulation of plant secondary metabolism)

INDEX TERM: Gene, plant  
ROLE: AGR (Agricultural use); BCP (Biochemical process); BPN  
(Biosynthetic preparation); BSU (Biological study,  
unclassified); PRP (Properties); BIOL (Biological study);  
PREP (Preparation); PROC (Process); USES (Uses)  
(SNG1; cloning, sequencing and characterization of  
Arabidopsis sinapoylglucose-malate sinapoyltransferase  
and its use in manipulation of plant secondary  
metabolism)

INDEX TERM: Disease resistance, plant  
(altering of; cloning, sequencing and characterization of  
Arabidopsis sinapoylglucose-malate sinapoyltransferase  
and its use in manipulation of plant secondary  
metabolism)

INDEX TERM: Arabidopsis  
Arabidopsis thaliana  
DNA sequences  
Genetic engineering  
Genetic vectors  
Molecular cloning  
Protein sequences  
cDNA sequences  
(cloning, sequencing and characterization of Arabidopsis  
sinapoylglucose-malate sinapoyltransferase and its use in  
manipulation of plant secondary metabolism)

INDEX TERM: Chimeric gene, plant  
ROLE: AGR (Agricultural use); BCP (Biochemical process); BPN  
(Biosynthetic preparation); BUU (Biological use,  
unclassified); BIOL (Biological study); PREP (Preparation);  
PROC (Process); USES (Uses)  
(cloning, sequencing and characterization of Arabidopsis  
sinapoylglucose-malate sinapoyltransferase and its use in  
manipulation of plant secondary metabolism)

INDEX TERM: Antisense oligonucleotides  
ROLE: BUU (Biological use, unclassified); BIOL (Biological  
study); USES (Uses)  
(cloning, sequencing and characterization of Arabidopsis  
sinapoylglucose-malate sinapoyltransferase and its use in  
manipulation of plant secondary metabolism)

INDEX TERM: Monosaccharides  
ROLE: AGR (Agricultural use); BCP (Biochemical process); BUU  
(Biological use, unclassified); BIOL (Biological study);  
PROC (Process); USES (Uses)  
(esters, secondary metabolism of; cloning, sequencing and  
characterization of Arabidopsis sinapoylglucose-malate  
sinapoyltransferase and its use in manipulation of  
plant secondary metabolism)

INDEX TERM: Plant pathogen  
(insect, altering plant resistance to; cloning,  
sequencing and characterization of Arabidopsis  
sinapoylglucose-malate sinapoyltransferase and its use in  
manipulation of plant secondary metabolism)

10/810211

INDEX TERM: Transformation, genetic  
(of plant cells; cloning, sequencing and  
characterization of Arabidopsis sinapoylglucose-malate  
sinapoyltransferase and its use in manipulation of  
plant secondary metabolism)

INDEX TERM: Insecta  
(plant pathogen, altering plant  
resistance to; cloning, sequencing and characterization  
of Arabidopsis sinapoylglucose-malate sinapoyltransferase  
and its use in manipulation of plant secondary  
metabolism)

INDEX TERM: Transgene  
ROLE: AGR (Agricultural use); BCP (Biochemical process); BPN  
(Biosynthetic preparation); BUU (Biological use,  
unclassified); BIOL (Biological study); PREP (Preparation);  
PROC (Process); USES (Uses)  
(plant; cloning, sequencing and  
characterization of Arabidopsis sinapoylglucose-malate  
sinapoyltransferase and its use in manipulation of  
plant secondary metabolism)

INDEX TERM: Fermentation  
(protein; cloning, sequencing and characterization of  
Arabidopsis sinapoylglucose-malate sinapoyltransferase  
and its use in manipulation of plant secondary  
metabolism)

INDEX TERM: Metabolism, plant  
(secondary; cloning, sequencing and characterization of  
Arabidopsis sinapoylglucose-malate sinapoyltransferase  
and its use in manipulation of plant secondary  
metabolism)

INDEX TERM: Genetic element  
ROLE: BUU (Biological use, unclassified); BIOL (Biological  
study); USES (Uses)  
(signal sequence; cloning, sequencing and  
characterization of Arabidopsis sinapoylglucose-malate  
sinapoyltransferase and its use in manipulation of  
plant secondary metabolism)

INDEX TERM: UV B radiation  
(solar, altering plant resistance to; cloning,  
sequencing and characterization of Arabidopsis  
sinapoylglucose-malate sinapoyltransferase and its use in  
manipulation of plant secondary metabolism)

INDEX TERM: Plant cell  
(transformation of; cloning, sequencing and  
characterization of Arabidopsis sinapoylglucose-malate  
sinapoyltransferase and its use in manipulation of  
plant secondary metabolism)

INDEX TERM: Embryophyta  
Plants  
(transgenic; cloning, sequencing and characterization of  
Arabidopsis sinapoylglucose-malate sinapoyltransferase  
and its use in manipulation of plant secondary  
metabolism)

INDEX TERM: 9005-53-2, Lignin, biological studies  
ROLE: AGR (Agricultural use); BCP (Biochemical process); BUU  
(Biological use, unclassified); BIOL (Biological study);  
PROC (Process); USES (Uses)  
(altering lignin biosynthesis; cloning, sequencing and  
characterization of Arabidopsis sinapoylglucose-malate  
sinapoyltransferase and its use in manipulation of

plant secondary metabolism)  
INDEX TERM: 18696-26-9, Sinapine  
ROLE: AGR (Agricultural use); BCP (Biochemical process); BUU (Biological use, unclassified); BIOL (Biological study); PROC (Process); USES (Uses)  
(altering sinapoylcholine content; cloning, sequencing and characterization of Arabidopsis sinapoylglucose-malate sinapoyltransferase and its use in manipulation of plant secondary metabolism)

INDEX TERM: 390003-54-0D, subfragments are claimed  
ROLE: AGR (Agricultural use); BCP (Biochemical process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process); USES (Uses)  
(amino acid sequence; cloning, sequencing and characterization of Arabidopsis sinapoylglucose-malate sinapoyltransferase and its use in manipulation of plant secondary metabolism)

INDEX TERM: 390003-53-9D, subfragments are claimed  
ROLE: AGR (Agricultural use); BCP (Biochemical process); BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process); USES (Uses)  
(amino acid sequence; cloning, sequencing and characterization of Arabidopsis sinapoylglucose-malate sinapoyltransferase and its use in manipulation of plant secondary metabolism)

INDEX TERM: 76095-65-3P, Sinapoylglucose: malate sinapoyltransferase  
ROLE: AGR (Agricultural use); BCP (Biochemical process); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)  
(cloning, sequencing and characterization of Arabidopsis sinapoylglucose-malate sinapoyltransferase and its use in manipulation of plant secondary metabolism)

INDEX TERM: 65-85-0D, Benzoic acid, monosaccharide ester conjugates  
69-72-7D, o-Hydroxybenzoic acid, monosaccharide ester conjugates 99-06-9D, monosaccharide ester conjugates 99-50-3D, 3,4-Dihydroxybenzoic acid, monosaccharide ester conjugates 121-34-6D, Vanillic acid, monosaccharide ester conjugates 331-39-5D, Caffeic acid, monosaccharide ester conjugates 530-57-4D, Syringic acid, monosaccharide ester conjugates 530-59-6D, Sinapic acid, monosaccharide ester conjugates 537-73-5D, Isoferulic acid, monosaccharide ester conjugates 583-17-5D, o-Coumaric acid, monosaccharide ester conjugates 588-30-7D, monosaccharide ester conjugates 621-82-9D, Cinnamic acid, monosaccharide ester conjugates 1135-24-6D, Ferulic acid, monosaccharide ester conjugates 1782-55-4D, 5-Hydroxyferulic acid, monosaccharide ester conjugates  
ROLE: AGR (Agricultural use); BCP (Biochemical process); BUU (Biological use, unclassified); BIOL (Biological study); PROC (Process); USES (Uses)  
(cloning, sequencing and characterization of Arabidopsis sinapoylglucose-malate sinapoyltransferase and its use in manipulation of plant secondary metabolism)

INDEX TERM: 390003-50-6  
ROLE: AGR (Agricultural use); BCP (Biochemical process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process); USES (Uses)

(nucleotide sequence; cloning, sequencing and characterization of Arabidopsis sinapoylglucose-malate sinapoyltransferase and its use in manipulation of plant secondary metabolism)

INDEX TERM: 390003-51-7D, subfragments are claimed 390003-52-8D, subfragments are claimed  
 ROLE: AGR (Agricultural use); BCP (Biochemical process); BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process); USES (Uses)  
 (nucleotide sequence; cloning, sequencing and characterization of Arabidopsis sinapoylglucose-malate sinapoyltransferase and its use in manipulation of plant secondary metabolism)

INDEX TERM: 50-69-1D, Ribose, esters 50-99-7D, Glucose, esters 57-48-7D, Fructose, esters 58-86-6D, Xylose, esters 59-23-4D, Galactose, esters 65-42-9D, Lyxose, esters 87-79-6D, Sorbose, esters 147-81-9D, Arabinose, esters 551-84-8D, Xylulose, esters 2152-76-3D, Idose, esters 3019-74-7D, Sedoheptulose, esters 3458-28-4D, Mannose, esters 5556-48-9D, Ribulose, esters 5987-68-8D, Altrose, esters 6038-51-3D, Allose, esters 17598-81-1D, Tagatose, esters 19163-87-2D, Gulose, esters 23140-52-5D, Psicose, esters 30077-17-9D, Talose, esters  
 ROLE: AGR (Agricultural use); BCP (Biochemical process); BUU (Biological use, unclassified); BIOL (Biological study); PROC (Process); USES (Uses)  
 (secondary metabolism of; cloning, sequencing and characterization of Arabidopsis sinapoylglucose-malate sinapoyltransferase and its use in manipulation of plant secondary metabolism)

INDEX TERM: 390053-12-0 390053-13-1 390053-14-2 390053-15-3 390053-16-4 390053-17-5  
 ROLE: PRP (Properties)  
 (unclaimed nucleotide sequence; cloning, sequencing and characterization of Arabidopsis sinapoylglucose-malate sinapoyltransferase and its use in the manipulation of plant secondary metabolism)

INDEX TERM: 390053-18-6 390053-19-7 390053-20-0  
 ROLE: PRP (Properties)  
 (unclaimed protein sequence; cloning, sequencing and characterization of Arabidopsis sinapoylglucose-malate sinapoyltransferase and its use in the manipulation of plant secondary metabolism)

INDEX TERM: 389862-23-1  
 ROLE: PRP (Properties)  
 (unclaimed sequence; cloning, sequencing and characterization of Arabidopsis sinapoylglucose-malate sinapoyltransferase and its use in the manipulation of plant secondary metabolism)

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

DATE LAST CITED: Date last citing reference entered STN: 16 Feb 2009

OS.CITING.REFS: CAPLUS 2007:462047

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD.

REFERENCE(S): (1) Anon; WO 9723599 A2 ZCAPLUS  
 (2) Anon; WO 9937786 A2 ZCAPLUS

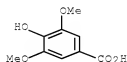
IT 530-57-4D, Syringic acid, monosaccharide ester conjugates  
 RL: AGR (Agricultural use); BCP (Biochemical process); BUU (Biological use, unclassified); BIOL (Biological study); PROC (Process);

## USES (Uses)

(cloning, sequencing and characterization of Arabidopsis  
sinapoylglucose-malate sinapoyltransferase and its use in manipulation  
of plant secondary metabolism)

RN 530-57-4 ZCAPLUS

CN Benzoic acid, 4-hydroxy-3,5-dimethoxy- (CA INDEX NAME)



L92 ANSWER 13 OF 27 ZCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2001:833004 ZCAPLUS Full-text

DOCUMENT NUMBER: 135:354168

ENTRY DATE: Entered STN: 16 Nov 2001

TITLE: Antimicrobial compositions containing a phenol

oxidizing enzyme system and an enhancing agent

Schneider, Palle; Moller, Soren; Biedermann, Kirsten;

Johansen, Charlotte

Novozymes A/S, Den.

PATENT ASSIGNEE(S):

SOURCE: PCT Int. Appl., 41 pp.

CODEN: PIXXD2

DOCUMENT TYPE:

Patent

LANGUAGE:

English

INT. PATENT CLASSIF.:

MAIN:

A01N065-00

SECONDARY:

A01N063-02; A01N063-00; A01N065-00; A01N043-84;

A01N043-78; A01N043-42; A01N043-38; A01N037-40;

A01N037-38; A01N035-10; A01N035-04; A01N033-26;

A01N033-10; A01N031-16; A01N031-08; A01N033-06;

A01N063-02; A01N043-84; A01N043-78

CLASSIFICATION:

5-2 (Agrochemical Bioregulators)

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001084937	A1	20011115	WO 2001-DK315	20010507 <--
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 20020102246	A1	20020801	US 2001-850316	20010507 <--
PRIORITY APPLN. INFO.:			DK 2000-755	A 20000508 <--
			US 2000-204710P	P 20000516 <--

PATENT CLASSIFICATION CODES:

PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2001084937	ICM	A01N065-00

ICS A01N063-02; A01N063-00; A01N065-00; A01N043-84;  
A01N043-78; A01N043-42; A01N043-38; A01N037-40;  
A01N037-38; A01N035-10; A01N035-04; A01N033-26;  
A01N033-10; A01N031-16; A01N031-08; A01N033-06;  
A01N063-02; A01N043-84; A01N043-78

IPCI A01N0065-00 [ICM,7]; A01N0063-02 [ICS,7]; A01N0063-00  
[ICS,7]; A01N0065-00 [ICS,7]; A01N0043-84 [ICS,7];  
A01N0043-78 [ICS,7]; A01N0043-42 [ICS,7]; A01N0043-38  
[ICS,7]; A01N0043-34 [ICS,7,C\*]; A01N0037-40 [ICS,7];  
A01N0037-38 [ICS,7]; A01N0037-36 [ICS,7,C\*];  
A01N0035-10 [ICS,7]; A01N0035-04 [ICS,7]; A01N0035-00  
[ICS,7,C\*]; A01N0033-26 [ICS,7]; A01N0033-10 [ICS,7];  
A01N0031-16 [ICS,7]; A01N0031-08 [ICS,7]; A01N0031-00  
[ICS,7,C\*]; A01N0033-06 [ICS,7]; A01N0033-00  
[ICS,7,C\*]; A01N0063-02 [ICS,7]; A01N0043-84 [ICS,7];  
A01N0043-78 [ICS,7]; A01N0043-72 [ICS,7,C\*]

IPCR A01N0063-00 [I,C\*]; A01N0063-00 [I,A]; A01N0063-02  
[I,C\*]; A01N0063-02 [I,A]; A01N0065-00 [I,C\*];  
A01N0065-00 [I,A]

ECLA A01N063/00+M; A01N063/02+M; A01N065/00+; A01N065/00+M

US 20020102246 IPCI A61K0038-44 [ICM,7]; A61K0038-43 [ICM,7,C\*];  
A61K0007-00 [ICS,7]

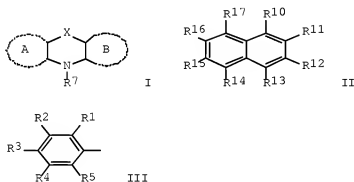
IPCR A01N0063-00 [I,C\*]; A01N0063-00 [I,A]

NCL 424/094.400; 424/401.000; 510/320.000

ECLA A01N063/00+M

OTHER SOURCE(S): MARPAT 135:354168

GRAPHIC IMAGE:



## ABSTRACT:

An enzymic antimicrobial composition comprises a phenol oxidizing enzyme system and an enhancing agent selected from I, C-X-D, ER6, and II, in which C, D, and E independently of each other are III (R1, R2, R3, R4, R5, R6, R7, R10, R11, R12, R13, R14, R15, R16, R17 = H, OH, C1-8-alkyl, acyl, SO<sub>3</sub>H, NO<sub>2</sub>, CN, Cl, Br, F, NHR<sub>8</sub>, N(R<sub>8</sub>)<sub>2</sub>, OR<sub>9</sub>, C1-8-alkyl-OR<sub>9</sub>, or C1-8-alkyl-OOR<sub>9</sub>; wherein R<sub>8</sub>, R<sub>9</sub> = H, C1-4-alkyl or acyl; X = single bond, NH, NCH<sub>3</sub>, NC<sub>2</sub>H<sub>5</sub>, O, S, N=N, CH=N, or CH=CH; A, B = (un)substituted six membered aromatic rings). The composition is used for killing or inhibiting microbial cells or micro-organisms, e.g. in laundry, on hard surfaces, in water systems, on skin, on teeth or on mucous membranes.

10/810211

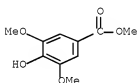
It is also used for preserving food products, cosmetics, paints, coatings, etc.

SUPPL. TERM: antimicrobial phenol oxidizing enzyme laccase peroxidase  
INDEX TERM: Antimicrobial agents  
(antimicrobial compns. containing phenol oxidizing enzyme system and enhancing agent)  
INDEX TERM: Cosmetics  
Laundering  
(antimicrobial compns. containing phenol oxidizing enzyme system and enhancing agent for)  
INDEX TERM: Pseudomonas putida  
(enzymic antimicrobial composition activity against)  
INDEX TERM: Enzymes, biological studies  
ROLE: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
(phenol oxidizing; antimicrobial composition containing)  
INDEX TERM: 7722-84-1, Hydrogen peroxide, biological studies  
9003-99-0D, Peroxidase, Bacillus 9003-99-0D, Peroxidase, Coprinus cinereus 9003-99-0D, Peroxidase, Coprinus macrorrhizus 9003-99-0D, Peroxidase, Soybean 80498-15-3D, Laccase,, Coprinus cinereus 80498-15-3D, Laccase,, Polyporus pinsitus 80498-15-3D, Laccase, Pycnoporus cinnabarinus 80498-15-3D, Laccase,, Rhizoctonia solani 173402-34-1, Laccase, prepro-(Scytalidium thermophilum clone pShTh6 gene lccS) 209337-91-7, Laccase (Myceliophthora thermophila)  
ROLE: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
(antimicrobial composition containing)  
INDEX TERM: 83-56-7, 1,5-Naphthalenediol 92-88-6, [1,1'-Biphenyl]-4,4'-diol 123-30-8 343-27-1, Harmine hydrochloride 578-66-5, 8-Quinolinamine 582-17-2, 2,7-Naphthalenediol 836-44-2 884-35-5 889-37-2 1965-09-9 2243-62-1, 1,5-Naphthalenediamine 2283-08-1 2496-15-3 5060-82-2 6369-04-6 7400-08-0, p-Cumaric acid 23517-76-2 25782-99-4 27151-57-1 54827-17-7 57102-94-0 153004-35-4 372188-65-3  
ROLE: MOA (Modifier or additive use); USES (Uses)  
(enhancing agent in enzymic antimicrobial composition containing phenol oxidizing enzyme)  
INDEX TERM: 9003-99-0, Peroxidase  
ROLE: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
(horseradish; antimicrobial composition containing)  
OS.CITING REF COUNT: 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD (6 CITINGS)  
DATE LAST CITED: Date last citing reference entered STN: 16 Feb 2009  
OS.CITING.REFS: CAPLUS 2003:875036; 2003:22652; 2003:22651; 2003:22650; 2003:22649; 2003:22643  
REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD.  
REFERENCE(S): (1) Busch Alfred; WO 9743383 A 1997 ZCAPLUS  
(2) Damhus Ture; WO 9610079 A 1996 ZCAPLUS  
(3) Ebdstrup Soren; WO 9412619 A 1994 ZCAPLUS  
(4) Ebdstrup Soren; WO 9412621 A 1994 ZCAPLUS  
(5) Henriksen Lotte Rugholm; WO 9741215 A 1997 ZCAPLUS  
(6) Novo Nordisk AS; WO 0068324 A 2000 ZCAPLUS  
(7) Novonordisk AS; WO 9218683 A 1992 ZCAPLUS  
(8) Novonordisk AS; WO 9606930 A 1996 ZCAPLUS



- (9) Novonordisk AS; WO 9742825 A 1997 ZCAPLUS  
 (10) Novonordisk AS; WO 9923887 A 1999 ZCAPLUS  
 (11) Orndorff Steve, A; US 4478683 A 1984

IT 884-35-5  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (enhancing agent in enzymic antimicrobial composition containing phenol  
 oxidizing enzyme)  
 RN 884-35-5 ZCAPLUS  
 CN Benzoic acid, 4-hydroxy-3,5-dimethoxy-, methyl ester (CA INDEX NAME)



L92 ANSWER 14 OF 27 ZCAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2001:185033 ZCAPLUS Full-text  
 DOCUMENT NUMBER: 134:221768  
 ENTRY DATE: Entered STN: 16 Mar 2001  
 TITLE: Freshness-retaining agent and its use for  
 agricultural or horticultural products  
 Iijima, Yoshihiko  
 INVENTOR(S):  
 PATENT ASSIGNEE(S): Dainichiseika Color & Chemicals Mfg. Co. Ltd., Japan  
 SOURCE: Eur. Pat. Appl., 13 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 INT. PATENT CLASSIF.:  
 MAIN: A23B007-10  
 SECONDARY: A23B007-157; A23B007-144; A23B009-18; A23B009-30;  
 A23B009-26  
 CLASSIFICATION:  
 17-4 (Food and Feed Chemistry)  
 Section cross-reference(s): 5  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1082906	A2	20010314	EP 2000-118268	20000818 <--
EP 1082906	A3	20030813		
EP 1082906	B1	20060816		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
CA 2317328	A1	20010310	CA 2000-2317328	20000901 <--
CA 2317328	C	20080108		
ES 2269048	T3	20070401	ES 2000-118268	20000904 <--
CN 1287958	A	20010321	CN 2000-126934	20000908 <--
US 6340654	B1	20020122	US 2000-657904	20000908 <--
TW 228973	B	20050311	TW 2000-89117297	20000927 <--
KR 2005081181	A	20050818	KR 2005-54911	20050624 <--
PRIORITY APPLN. INFO.:			JP 1999-257261	A 19990910 <--
			JP 1999-257262	A 19990910 <--



IPCR A23B0007-10 [I,C\*]; A23B0007-10 [I,A]; A23B0007-14 [I,C\*]; A23B0007-144 [I,C\*]; A23B0007-144 [I,A]; A23B0007-154 [I,A]; A23B0007-157 [I,A]; A23B0009-00 [I,C\*]; A23B0009-18 [I,A]; A23B0009-26 [I,A]; A23B0009-30 [I,A]

NCL 504/114.000; 426/312.000; 426/477.000; 426/562.000

ECLA A23B007/10; A23B007/144; A23B007/154; A23B007/157; A23B009/18; A23B009/26; A23B009/30

TW 228973 IPCI A01N0003-02 [ICS,7]; A01N0003-00 [ICS,7,C\*]; A23B0007-10 [ICS,7]

IPCR A23B0007-10 [I,C\*]; A23B0007-10 [I,A]; A23B0007-14 [I,C\*]; A23B0007-144 [I,C\*]; A23B0007-144 [I,A]; A23B0007-154 [I,A]; A23B0007-157 [I,A]; A23B0009-00 [I,C\*]; A23B0009-18 [I,A]; A23B0009-26 [I,A]; A23B0009-30 [I,A]

ECLA A23B007/10; A23B007/144; A23B007/154; A23B007/157; A23B009/18; A23B009/26; A23B009/30

KR 2005081181 IPCI A23B0007-144 [ICM,7]

ECLA A23B007/10; A23B007/144; A23B007/154; A23B007/157; A23B009/18; A23B009/26; A23B009/30

## ABSTRACT:

A freshness-retaining agent for an agricultural or horticultural product comprises an organic acid and a hydrogen carbonate. The organic acid may preferably be an organic acid which in the presence of water given off from the agricultural or horticultural product, reacts with the hydrogen carbonate such that carbon dioxide gas is gradually generated, for example, cinnamic acid, benzoic acid or citric acid or a derivative thereof. The hydrogen carbonate may preferably be sodium bicarbonate. The freshness of the agricultural or horticultural product can be retained by causing the freshness-retaining agent to exist in the same atmospheric as the agricultural or horticultural product such that the freshness-retaining agent is allowed to gradually generate carbon dioxide gas in the presence of water given off from the agricultural or horticultural product.

SUPPL. TERM: food horticulture plant freshness carboxylate bicarbonate

INDEX TERM: Polymers, biological studies  
 ROLE: AGR (Agricultural use); FFD (Food or feed use); BIOL (Biological study); USES (Uses)  
 (acidic group-containing; freshness-retaining agent and its use for agricultural or horticultural products)

INDEX TERM: Plant (Embryophyta)  
 (edible; freshness-retaining agent and its use for agricultural or horticultural products)

INDEX TERM: Phosphates, biological studies  
 Sulfates, biological studies  
 ROLE: AGR (Agricultural use); FFD (Food or feed use); BIOL (Biological study); USES (Uses)  
 (esters, polymers containing; freshness-retaining agent and its use for agricultural or horticultural products)

INDEX TERM: Apple  
 Crop (plant)  
 Food preservation  
 Plant (Embryophyta)  
 (freshness-retaining agent and its use for agricultural or horticultural products)

INDEX TERM: Bicarbonates  
 Carboxylic acids, biological studies  
 ROLE: AGR (Agricultural use); FFD (Food or feed use); BIOL (Biological study); USES (Uses)

(freshness-retaining agent and its use for agricultural or horticultural products)

INDEX TERM: Food  
(plant products; freshness-retaining agent and its use for agricultural or horticultural products)

INDEX TERM: Carboxyl group  
(polymers containing; freshness-retaining agent and its use for agricultural or horticultural products)

INDEX TERM: Sulfonates  
ROLE: AGR (Agricultural use); FFD (Food or feed use); BIOL (Biological study); USES (Uses)  
(polymers containing; freshness-retaining agent and its use for agricultural or horticultural products)

INDEX TERM: 56-86-0, L-Glutamic acid, biological studies 59-67-6, Nicotinic acid, biological studies 65-85-0, Benzoic acid, biological studies 69-72-7, Salicylic acid, biological studies 77-92-9, Citric acid, biological studies 97-65-4, Itaconic acid, biological studies 110-44-1, Sorbic acid 112-38-9, Undecylenic acid 121-34-6, Vanillic acid 124-04-9, Adipic acid, biological studies 144-33-2, Disodium citrate 144-55-8, Sodium bicarbonate, biological studies 331-39-5, Caffeic acid 530-57-4, Syringic acid 621-82-9, Cinnamic acid, biological studies 1135-24-6, Ferulic acid 7400-08-0, p-Coumaric acid 18996-35-5, Monosodium citrate  
ROLE: AGR (Agricultural use); FFD (Food or feed use); BIOL (Biological study); USES (Uses)  
(freshness-retaining agent and its use for agricultural or horticultural products)

INDEX TERM: 124-38-9, Carbon dioxide, biological studies  
ROLE: BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)  
(freshness-retaining agent and its use for agricultural or horticultural products)

INDEX TERM: 7732-18-5, Water, biological studies  
ROLE: BSU (Biological study, unclassified); MFM (Metabolic formation); RCT (Reactant); BIOL (Biological study); FORM (Formation, nonpreparative); RACT (Reactant or reagent)  
(freshness-retaining agent and its use for agricultural or horticultural products)

INDEX TERM: 110-17-8, Fumaric acid, biological studies 298-14-6, Potassium bicarbonate 1066-33-7, Ammonium bicarbonate 9003-01-4, Polyacrylic acid  
ROLE: FFD (Food or feed use); BIOL (Biological study); USES (Uses)  
(freshness-retaining agent and its use for agricultural or horticultural products)

INDEX TERM: 74-85-1, Ethylene, processes  
ROLE: REM (Removal or disposal); PROC (Process)  
(freshness-retaining agent and its use for agricultural or horticultural products)

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

DATE LAST CITED: Date last citing reference entered STN: 16 Feb 2009

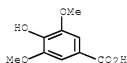
OS.CITING.REFS: CAPLUS 2004:203341

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD.

REFERENCE(S): (1) Anon; EP 0845262 A1 ZCAPLUS

- (2) Anon; GB 1442979 A ZCAPLUS  
 (3) Anon; US 2500919 A ZCAPLUS  
 (4) Anon; US 3891756 A ZCAPLUS  
 (5) Anon; US 4032374 A ZCAPLUS  
 (6) Anon; US 4777033 A ZCAPLUS  
 (7) Anon; US 5489399 A ZCAPLUS  
 (8) Anon; US 6083535 A ZCAPLUS  
 (9) Anon; WO 9745103 A1 ZCAPLUS

IT 530-57-4, Syringic acid  
 RL: AGR (Agricultural use); FFD (Food or feed use); BIOL  
 (Biological study); USES (Uses)  
 (freshness-retaining agent and its use for agricultural or  
 horticultural products)  
 RN 530-57-4 ZCAPLUS  
 CN Benzoic acid, 4-hydroxy-3,5-dimethoxy- (CA INDEX NAME)



L92 ANSWER 15 OF 27 ZCAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2001:152427 ZCAPLUS Full-text  
 DOCUMENT NUMBER: 134:174268  
 ENTRY DATE: Entered STN: 02 Mar 2001  
 TITLE: Insecticides and microbicides for plants  
 INVENTOR(S): Schuer, Joerg  
 PATENT ASSIGNEE(S): Germany  
 SOURCE: PCT Int. Appl., 39 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 INT. PATENT CLASSIF.:  
 MAIN: A01N031-04  
 SECONDARY: A01N037-40; A01N031-04; A01N065-00; A01N037-40;  
 A01N037-36; A01N031-02; A01N037-40; A01N065-00;  
 A01N037-36; A01N031-04; A01N031-02  
 CLASSIFICATION: 5-4 (Agrochemical Bioregulators)  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001013727	A1	20010301	WO 2000-EP8344	20000825 <--
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
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DE 19940283	A1	20010301	DE 1999-19940283	19990825 <--
CA 2382740	A1	20010301	CA 2000-2382740	20000825 <--

EP 1206184	A1	20020522	EP 2000-969251	20000825 <--
EP 1206184	B1	20050119		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,				
IE, SI, LT, LV, FI, RO, MK, CY, AL				
JP 2003507397	T	20030225	JP 2001-517880	20000825 <--
AU 778900	B2	20041223	AU 2000-79038	20000825 <--
AT 287211	T	20050215	AT 2000-969251	20000825 <--
ES 2235960	T3	20050716	ES 2000-969251	20000825 <--
ZA 2002001510	A	20030311	ZA 2002-1510	20020222 <--
US 20080045587	A1	20080221	US 2007-780408	20070719 <--
PRIORITY APPLN. INFO.:			DE 1999-19940283	A 19990825 <--
			WO 2000-EP8344	W 20000825 <--
			US 2002-69476	B1 20020701 <--

## PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2001013727	ICM	A01N031-04
	ICS	A01N037-40; A01N031-04; A01N065-00; A01N037-40; A01N037-36; A01N031-02; A01N037-40; A01N065-00; A01N037-36; A01N031-04; A01N031-02
	IPCI	A01N0031-04 [ICM,7]; A01N0037-40 [ICS,7]; A01N0031-04 [ICS,7]; A01N0065-00 [ICS,7]; A01N0037-36 [ICS,7]; A01N0031-02 [ICS,7]; A01N0031-00 [ICS,7,C*]
	IPCR	A01N0025-02 [I,C*]; A01N0025-02 [I,A]; A01N0031-00 [I,C*]; A01N0031-04 [I,A]; A01N0031-16 [I,A]; A01N0037-36 [I,C*]; A01N0037-40 [I,A]; A01N0065-00 [I,C]; A01N0065-00 [I,A]
DE 19940283	ECLA	A01N031/04+M; A01N037/40+M
	IPCI	A01N0031-08 [ICM,7]; A01N0031-00 [ICM,7,C*]
	IPCR	A01N0025-02 [I,C*]; A01N0025-02 [I,A]; A01N0031-00 [I,C*]; A01N0031-04 [I,A]; A01N0031-16 [I,A]; A01N0037-36 [I,C*]; A01N0037-40 [I,A]; A01N0065-00 [I,C*]; A01N0065-00 [I,A]
	ECLA	A01N031/04+M; A01N037/40+M
CA 2382740	IPCI	A01N0031-04 [ICM,7]; A01N0065-00 [ICS,7]; A01N0031-02 [ICS,7]; A01N0031-00 [ICS,7,C*]; A01N0037-36 [ICS,7]; A01N0037-40 [ICS,7]
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EP 1206184	IPCI	A01N0031-04 [ICM,6]; A01N0037-40 [ICS,6]; A01N0031-04 [ICI,6]; A01N0065-00 [ICI,6]; A01N0037-40 [ICI,6]; A01N0037-36 [ICI,6]; A01N0037-40 [ICI,6]; A01N0065-00 [ICI,6]; A01N0037-36 [ICI,6]; A01N0031-04 [ICI,6]; A01N0031-02 [ICI,6]; A01N0031-00 [ICI,6,C*]
	IPCR	A01N0025-02 [I,C*]; A01N0025-02 [I,A]; A01N0031-00 [I,C*]; A01N0031-04 [I,A]; A01N0031-16 [I,A]; A01N0037-36 [I,C*]; A01N0037-40 [I,A]; A01N0065-00 [I,C]; A01N0065-00 [I,A]
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JP 2003507397	IPCI	A01N0025-02 [ICM,7]; A01N0031-04 [ICS,7]; A01N0031-16 [ICS,7]; A01N0031-00 [ICS,7,C*]; A01N0065-00 [ICS,7] A01N0025-02 [I,C*]; A01N0025-02 [I,A]; A01N0031-00 [I,C*]; A01N0031-04 [I,A]; A01N0031-16 [I,A]; A01N0037-36 [I,C*]; A01N0037-40 [I,A]; A01N0065-00 [I,C]; A01N0065-00 [I,A]
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	IPCR	A01N0025-02 [I,C*]; A01N0025-02 [I,A]; A01N0031-00 [I,C*]; A01N0031-04 [I,A]; A01N0031-16 [I,A]; A01N0037-36 [I,C*]; A01N0037-40 [I,A]; A01N0065-00 [I,C]; A01N0065-00 [I,A]
	ECLA	A01N031/04+M; A01N037/40+M
AT 287211	IPCI	A01N0031-04 [ICM,7]; A01N0031-00 [ICM,7,C*]; A01N0037-40 [ICS,7]; A01N0065-00 [ICS,7]; A01N0037-36 [ICS,7]
	IPCR	A01N0025-02 [I,C*]; A01N0025-02 [I,A]; A01N0031-00 [I,C*]; A01N0031-04 [I,A]; A01N0031-16 [I,A]; A01N0037-36 [I,C*]; A01N0037-40 [I,A]; A01N0065-00 [I,C]; A01N0065-00 [I,A]
	ECLA	A01N031/04+M; A01N037/40+M
ES 2235960	IPCI	A01N0031-04 [ICM,7]; A01N0037-40 [ICS,7]; A01N0065-00 [ICS,7]; A01N0037-36 [ICS,7]; A01N0031-02 [ICS,7]; A01N0031-00 [ICS,7,C*]
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	ECLA	A01N031/04+M; A01N037/40+M
US 20080045587	IPCI	A01N0043-16 [I,A]; A01N0043-02 [I,C*]; A01N0031-00 [I,A]; A01P0001-00 [I,A]
	IPCR	A01N0025-02 [I,C*]; A01N0025-02 [I,A]; A01N0043-02 [I,C]; A01N0043-16 [I,A]; A01N0031-00 [I,C]; A01N0031-00 [I,A]; A01N0031-04 [I,A]; A01N0031-16 [I,A]; A01N0037-36 [I,C*]; A01N0037-40 [I,A]; A01N0065-00 [I,C]; A01N0065-00 [I,A]; A01P0001-00 [I,C]; A01P0001-00 [I,A]
	NCL	514/460.000; 514/730.000
	ECLA	A01N031/04+M; A01N037/40+M

## ABSTRACT:

The invention relates to agents for protecting plants and/or parts of plants from insects and insect larvae and from microbial attack. The agents are lipophilic GRAS (generally recognized as safe) flavoring compds and hydrophilic GRAS. The lipophilic GRAS flavoring compds. are alcs. (benzyl alc., 1- or 2-phenylethanol, cinnamic alc., hydrocinnamic alc., etc.). The hydrophilic GRAS agents are alcs. (ethanol, propanol, isopropanol, etc.) or organic acids.

SUPPL. TERM:	GRAS flavoring agent insecticide microbicide plant
INDEX TERM:	Flavoring materials (GRAS; insecticides and microbicides for plants or plant parts)
INDEX TERM:	Camellia primula (extract; insecticides and microbicides for plants or plant parts)
INDEX TERM:	Tannins ROLE: AGR (Agricultural use); BIOL (Biological study); USES (Uses) (insecticide and microbicide for plants or plant parts)

10/810211

INDEX TERM: Antibacterial agents  
Cereal (grain)  
Cocoa (Theobroma cacao)  
Coffee (Coffea)  
Corn  
Cotton  
Fruit tree  
Insecticides  
Legume (Fabaceae)  
Nut (seed)  
Potato (Solanum tuberosum)  
Rice (Oryza sativa)  
Seed  
Spices  
Tea (Camellia sinensis)  
Tobacco  
(insecticides and microbicides for  
plants or plant parts)

INDEX TERM: Acetals  
Alcohols, biological studies  
Aldehydes, biological studies  
Anthocyanins  
Essential oils  
Flavanols  
Flavones  
Flavonoids  
Phenols, biological studies  
Terpenes, biological studies  
ROLE: AGR (Agricultural use); BIOL (Biological study); USES  
(Uses)  
(insecticides and microbicides for  
plants or plant parts)

INDEX TERM: Esters, biological studies  
ROLE: AGR (Agricultural use); BIOL (Biological study); USES  
(Uses)  
(lipophilic; insecticides and  
microbicides for plants or  
plant parts)

INDEX TERM: Acids, biological studies  
ROLE: AGR (Agricultural use); BIOL (Biological study); USES  
(Uses)  
(organic; insecticides and microbicides  
for plants or plant parts)

INDEX TERM: Plant (Embryophyta)  
(ornamental; insecticides and  
microbicides for plants or  
plant parts)

INDEX TERM: Phenols, biological studies  
ROLE: AGR (Agricultural use); BIOL (Biological study); USES  
(Uses)  
(polyphenols, nonpolymeric; insecticide and  
microbicide for plants or plant  
parts)

INDEX TERM: 50-21-5, Lactic acid, biological studies 56-81-5,  
Glycerol, biological studies 57-55-6, Propylene glycol,  
biological studies 60-12-8, 2-Phenylethanol 62-54-4,  
Calcium acetate 64-17-5, (Ethanol, biological studies  
64-18-6, Formic acid, biological studies 64-19-7, Acetic  
acid, biological studies 67-63-0, Isopropanol, biological  
studies 71-23-8, Propanol, biological studies 71-36-3,



Butanol, biological studies 71-41-0, Amyl alcohol, biological studies 77-92-9, Citric acid, biological studies 78-70-6, Linalool 78-83-1, Isobutanol, biological studies 87-69-4, Tartaric acid, biological studies 90-64-2, Mandelic acid 93-54-9, 1-Phenyl-1-propanol 98-01-1, Furfural, biological studies 98-85-1, 1-Phenylethanol 100-51-6, (Benzyl alcohol, biological studies 102-76-1, Triacetin 103-82-2, Phenylacetic acid, biological studies 104-54-1, Cinnamic alcohol 105-13-5, Anisic alcohol 106-22-9, Citronellol 106-24-1, Geraniol 110-17-8, Fumaric acid, biological studies 111-27-3, Hexyl alcohol, biological studies 111-70-6, Heptyl alcohol 111-87-5, Octyl alcohol, biological studies 112-30-1, Decanol 112-43-6, 10-Undecenol 112-53-8, 1-Dodecanol 121-33-5, Vanillin 122-97-4, Hydrocinnamic alcohol 123-38-6, Propionaldehyde, biological studies 123-51-3, IsoAmyl alcohol 127-08-2, Potassium acetate 127-09-3, Sodium acetate 142-50-7, Nerolidol 143-08-8, Nonyl alcohol 470-82-6, Cineol 499-12-7, Aconitic acid 507-70-0, Borneol 513-86-0, Acetoin 536-60-7, Cumyl alcohol 539-86-6, Allicin 2216-51-5 6812-78-8, Rhodinol 6915-15-7, Malic acid 8000-41-7, Terpineol 36653-82-4, 1-Hexadecanol 186209-48-3, Nonadienol

ROLE: AGR (Agricultural use); BIOL (Biological study); USES (Uses)

(insecticide and microbicide for plants or plant parts)

INDEX TERM: 87-66-1, Pyrogallol 108-46-3, Resorcinol, biological studies 108-73-6, Phloroglucinol 109-52-4, Valeric acid, biological studies 110-82-7, Cyclohexane, biological studies 112-05-0, Pelargonic acid 120-80-9, Pyrocatechol, biological studies 122-59-8, Phenoxycetic acid 123-31-9, Hydroquinone, biological studies 124-04-9, Adipic acid, biological studies 125-46-2, Usnic acid 142-62-1, Capronic acid, biological studies 149-91-7D, Gallic acid, derivs. 331-39-5, Caffeic acid 501-36-0, Resveratrol 503-74-2, IsoValeric acid 621-82-9, Cinnamic acid, biological studies 9005-53-2, Lignin, biological studies

ROLE: AGR (Agricultural use); BIOL (Biological study); USES (Uses)

(insecticides and microbicides for plants or plant parts)

OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

DATE LAST CITED: Date last citing reference entered STN: 16 Feb 2009

OS.CITING.REFS: CAPLUS 2008:1002765; 2002:885967

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD.

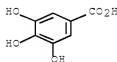
REFERENCE(S): (1) Anon; PATENT ABSTRACTS OF JAPAN 1998, V1998(14)  
 (2) Dainippon; JP 10259103 A 1998 ZCAPLUS  
 (3) Delpach, L; FR 2228434 A 1974 ZCAPLUS  
 (4) Doi, K; JP 04069308 A 1992 ZCAPLUS  
 (5) Ecosmart Technologies Inc; WO 9854971 A 1998 ZCAPLUS  
 (6) McCormac Dennis J Doing Busine; WO 9531100 A 1995 ZCAPLUS  
 (7) Menno Chemie Vertriebsges Mbh; WO 0027192 A 2000  
 (8) Nakano Sumese Kk; JP 04316506 A 1992 ZCAPLUS  
 (9) Rod, R; US 5814325 A 1998 ZCAPLUS

(10) Schuer, J; WO 9629895 A 1996 ZCAPLUS  
 (11) Schuer, J; WO 9858540 A 1998 ZCAPLUS  
 (12) Schuer, J; WO 0003612 A 2000  
 (13) Shioi, K; JP 46028797 B  
 (14) Sterling Drug Inc; CA 2012288 A 1990 ZCAPLUS  
 (15) Thorsell, W; SE 8900902 A 1989 ZCAPLUS

IT 149-91-7D, Gallic acid, derivs.  
 RL: AGR (Agricultural use); BIOL (Biological study); USES  
 (Uses)  
 (insecticides and microbicides for plants  
 or plant parts)

RN 149-91-7 ZCAPLUS

CN Benzoic acid, 3,4,5-trihydroxy- (CA INDEX NAME)



L92 ANSWER 16 OF 27 ZCAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2001:106343 ZCAPLUS Full-text  
 DOCUMENT NUMBER: 134:158825  
 ENTRY DATE: Entered STN: 13 Feb 2001  
 TITLE: Antibacterial materials, deodorants, repellents, and  
 dehumidifying materials  
 INVENTOR(S): Shimada, Tsumoru; Ikuma, Kazuhito; Inamoto, Tetsuya  
 PATENT ASSIGNEE(S): Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 INT. PATENT CLASSIF.:  
 MAIN: A01N059-16  
 SECONDARY: A01N059-16; A01N025-08; A01N059-06; A01N059-20;  
 A61L009-01; C09K015-00  
 CLASSIFICATION: 5-2 (Agrochemical Bioregulators)  
 Section cross-reference(s): 17, 59, 60  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001039809	A	20010213	JP 1999-246049	19990727 <--
PRIORITY APPLN. INFO.:			JP 1999-246049	19990727 <--
PATENT CLASSIFICATION CODES:				
PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES		
JP 2001039809	ICM	A01N059-16		
	ICS	A01N059-16; A01N025-08; A01N059-06; A01N059-20; A61L009-01; C09K015-00		
	IPCI	A01N0059-16 [ICM,7]; A01N0059-16 [ICS,7]; A01N0025-08 [ICS,7]; A01N0059-06 [ICS,7]; A01N0059-20 [ICS,7]; A61L0009-01 [ICS,7]; C09K0015-00 [ICS,7]		
	IPCR	A61L0009-01 [I,C*]; A61L0009-01 [I,A]; A01N0025-08 [I,C*]; A01N0025-08 [I,A]; A01N0059-06 [I,C*];		

A01N0059-06 [I,A]; A01N0059-16 [I,C\*]; A01N0059-16  
 [I,A]; A01N0059-20 [I,A]; C09K0015-00 [I,C\*];  
 C09K0015-00 [I,A]

## ABSTRACT:

The materials are rice husk carbon which are mixed with solns. containing metal-fixing agents and/or antioxidants and metals and dried. Rice husk carbon was mixed with an aqueous solution containing CuSO<sub>4</sub>, Zn(NO<sub>3</sub>)<sub>2</sub>, EDTA-4Na, and lauryldiaminoethylglycine Na (Nissan Anon LG) and dried to give a material, which totally controlled *Staphylococcus aureus* and *Escherichia coli*.

SUPPL. TERM: rice husk carbon metal bactericide deodorant;  
 antioxidant metal bactericide repellent rice husk;  
 recycling waste rice husk bactericide deodorant; air  
 deodorization dehumidification rice husk carbon

INDEX TERM: Tocopherols  
 ROLE: BUU (Biological use, unclassified); TEM (Technical or  
 engineered material use); BIOL (Biological study); USES  
 (Uses)  
 (antioxidant; rice husk carbon mixed with  
 metals for antibacterial, deodorant, repellent, and  
 dehumidifying materials)

INDEX TERM: Air conditioning  
 (dehumidification; rice husk carbon mixed with  
 metals for antibacterial, deodorant, repellent, and  
 dehumidifying materials)

INDEX TERM: Air purification  
 (deodorization; rice husk carbon mixed with  
 metals for antibacterial, deodorant, repellent, and  
 dehumidifying materials)

INDEX TERM: Wastes  
 (food-processing, rice husk; rice  
 husk carbon mixed with metals for antibacterial,  
 deodorant, repellent, and dehumidifying materials)

INDEX TERM: Rice (*Oryza sativa*)  
 (husk; rice husk carbon mixed with metals for  
 antibacterial, deodorant, repellent, and dehumidifying  
 materials)

INDEX TERM: Carboxylic acids, biological studies  
 ROLE: BUU (Biological use, unclassified); TEM (Technical or  
 engineered material use); BIOL (Biological study); USES  
 (Uses)  
 (metal-fixing agents; rice husk carbon mixed  
 with metals for antibacterial, deodorant, repellent, and  
 dehumidifying materials)

INDEX TERM: Antibacterial agents  
 Antioxidants  
 Chelating agents  
 Deodorants  
 Insect repellents  
 (rice husk carbon mixed with metals for  
 antibacterial, deodorant, repellent, and dehumidifying  
 materials)

INDEX TERM: Metals, biological studies  
 ROLE: BAC (Biological activity or effector, except adverse);  
 BSU (Biological study, unclassified); BUU (Biological use,  
 unclassified); TEM (Technical or engineered material use);  
 BIOL (Biological study); USES (Uses)  
 (rice husk carbon mixed with metals for  
 antibacterial, deodorant, repellent, and dehumidifying  
 materials)

10/810211

INDEX TERM: Chaff  
(rice husk; rice husk carbon mixed  
with metals for antibacterial, deodorant, repellent, and  
dehumidifying materials)

INDEX TERM: Charcoal  
ROLE: BUU (Biological use, unclassified); TEM (Technical or  
engineered material use); BIOL (Biological study); USES  
(Uses)  
(rice husk; rice husk carbon mixed  
with metals for antibacterial, deodorant, repellent, and  
dehumidifying materials)

INDEX TERM: Food processing  
(wastes, rice husk; rice husk carbon  
mixed with metals for antibacterial, deodorant,  
repellent, and dehumidifying materials)

INDEX TERM: 50-81-7, Ascorbic acid, biological studies 89-65-6,  
Isoascorbic acid 96-27-5, Thioglycerol 121-79-9  
, Propyl gallate 7681-57-4, Sodium pyrosulfite  
7757-83-7, Sodium sulfite 7772-98-7, Sodium thiosulfate  
10117-38-1, Potassium sulfite 16731-55-8, Potassium  
pyrosulfite 24531-57-5, Thiosorbitol 25013-16-5,  
Butylhydroxyanisole 30587-81-6, Dibutylhydroxytoluene  
ROLE: BUU (Biological use, unclassified); TEM (Technical or  
engineered material use); BIOL (Biological study); USES  
(Uses)  
(antioxidant; rice husk carbon mixed with  
metals for antibacterial, deodorant, repellent, and  
dehumidifying materials)

INDEX TERM: 56-84-8, Aspartic acid, biological studies 56-86-0,  
Glutamic acid, biological studies 60-00-4, EDTA,  
biological studies 64-02-8, EDTA tetrasodium salt  
77-92-9, Citric acid, biological studies 110-15-6,  
Succinic acid, biological studies 110-16-7, Maleic acid,  
biological studies 141-82-2, Malonic acid, biological  
studies 144-62-7, Oxalic acid, biological studies  
18694-07-0, Hexametaphosphoric acid  
ROLE: BUU (Biological use, unclassified); TEM (Technical or  
engineered material use); BIOL (Biological study); USES  
(Uses)  
(metal-fixing agent; rice husk carbon mixed  
with metals for antibacterial, deodorant, repellent, and  
dehumidifying materials)

INDEX TERM: 74-93-1, Methyl mercaptan, processes 7664-41-7, Ammonia,  
processes 7783-06-4, Hydrogen sulfide, processes  
ROLE: REM (Removal or disposal); PROC (Process)  
(removal of; rice husk carbon mixed with metals  
for antibacterial, deodorant, repellent, and  
dehumidifying materials)

INDEX TERM: 7429-90-5, Aluminum, biological studies 7439-89-6, Iron,  
biological studies 7439-92-1, Lead, biological studies  
7439-96-5, Manganese, biological studies 7440-02-0,  
Nickel, biological studies 7440-22-4, Silver, biological  
studies 7440-31-5, Tin, biological studies 7440-32-6,  
Titanium, biological studies 7440-48-4, Cobalt, biological  
studies 7440-50-8, Copper, biological studies 7440-66-6,  
Zinc, biological studies 7440-67-7, Zirconium, biological  
studies 7440-69-9, Bismuth, biological studies  
7758-98-7, Cupric sulfate, biological studies 7779-88-6,  
Zinc nitrate 10377-66-9, Manganese dinitrate 10421-48-4,  
Ferric nitrate

10/810211

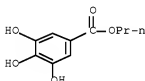
ROLE: BAC (Biological activity or effector, except adverse);  
 BSU (Biological study, unclassified); BUU (Biological use,  
 unclassified); TEM (Technical or engineered material use);  
 BIOL (Biological study); USES (Uses)  
 (rice husk carbon mixed with metals for  
 antibacterial, deodorant, repellent, and dehumidifying  
 materials)

INDEX TERM: 7440-44-0, Carbon, biological studies  
 ROLE: BUU (Biological use, unclassified); TEM (Technical or  
 engineered material use); BIOL (Biological study); USES  
 (Uses)  
 (rice husk; rice husk carbon mixed  
 with metals for antibacterial, deodorant, repellent, and  
 dehumidifying materials)

IT 121-79-9, Propyl gallate  
 RL: BUU (Biological use, unclassified); TEM (Technical or engineered  
 material use); BIOL (Biological study); USES (Uses)  
 (antioxidant; rice husk carbon mixed with metals for  
 antibacterial, deodorant, repellent, and dehumidifying materials)

RN 121-79-9 ZCAPLUS

CN Benzoic acid, 3,4,5-trihydroxy-, propyl ester (CA INDEX NAME)



L92 ANSWER 17 OF 27 ZCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2000:842294 ZCAPLUS Full-text

DOCUMENT NUMBER: 134:1333

ENTRY DATE: Entered STN: 01 Dec 2000

TITLE: Improved method for agrobacterium mediated  
 transformation of cotton

INVENTOR(S): Reynaerts, Arlette; De Sonville, Anne

PATENT ASSIGNEE(S): Aventis CropScience NV, Belg.

SOURCE: PCT Int. Appl., 32 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

INT. PATENT CLASSIF.:

MAIN: C12N015-82

CLASSIFICATION: 3-1 (Biochemical Genetics)

Section cross-reference(s): 9, 11

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000071733	A1	20001130	WO 2000-EP4611	20000518 <--
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR,				
CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU,				
ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU,				

LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD,  
 SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU,  
 ZA, ZW  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,  
 DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,  
 CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG  
 BR 2000010749 A 20020219 BR 2000-10749 20000518 <--  
 EP 1183377 A1 20020306 EP 2000-936770 20000518 <--  
 EP 1183377 B1 20070620  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, MC, PT, IE,  
 SI, LT, LV, FI, RO, CY  
 TR 200103311 T2 20020422 TR 2001-3311 20000518 <--  
 AU 772686 B2 20040506 AU 2000-52148 20000518 <--  
 CN 1234869 C 20060104 CN 2000-807727 20000518 <--  
 AT 365218 T 20070715 AT 2000-936770 20000518 <--  
 ES 2288478 T3 20080116 ES 2000-936770 20000518 <--  
 US 6483013 B1 20021119 US 2000-573555 20000519 <--  
 MX 2001011871 A 20030904 MX 2001-11871 20011116 <--  
 ZA 2001009521 A 20021119 ZA 2001-9521 20011119 <--  
 IN 2001CN01741 A 20070420 IN 2001-CN1741 20011211 <--  
 PRIORITY APPLN. INFO.:  
 US 1999-219317P P 19990519 <--  
 US 1999-314449 A 19990519 <--  
 WO 2000-EP4611 W 20000518 <--

## PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2000071733	ICM	C12N015-82
	IPCI	C12N0015-82 [ICM,7]
	IPCR	C12N0015-82 [I,C*]; C12N0015-82 [I,A]
	ECLA	C12N015/82A4B
BR 2000010749	IPCI	C12N0015-82 [ICM,7]
	IPCR	C12N0015-82 [I,C*]; C12N0015-82 [I,A]
	ECLA	C12N015/82A4B
EP 1183377	IPCI	C12N0015-82 [I,C]; C12N0015-82 [I,A]
	IPCR	C12N0015-82 [I,C]; C12N0015-82 [I,A]
	ECLA	C12N015/82A4B
TR 200103311	IPCI	C12N0015-82 [ICM,7]
	IPCR	C12N0015-82 [I,C*]; C12N0015-82 [I,A]
	ECLA	C12N015/82A4B
AU 772686	IPCI	C12N0015-82 [ICM,7]
	IPCR	C12N0015-82 [I,C*]; C12N0015-82 [I,A]
	ECLA	C12N015/82A4B
CN 1234869	IPCI	C12N0015-82 [I,A]; C12N0015-82 [I,C]
	IPCR	C12N0015-82 [I,C]; C12N0015-82 [I,A]
	ECLA	C12N015/82A4B
AT 365218	IPCI	C12N0015-82 [I,C]; C12N0015-82 [I,A]
	IPCR	C12N0015-82 [I,C]; C12N0015-82 [I,A]
	ECLA	C12N015/82A4B
ES 2288478	IPCI	C12N0015-82 [I,C]; C12N0015-82 [I,A]
	IPCR	C12N0015-82 [I,C]; C12N0015-82 [I,A]
	ECLA	C12N015/82A4B
US 6483013	IPCI	C12N0015-84 [ICM,7]; C12N0005-04 [ICS,7]; A01H0001-00 [ICS,7]; A01H0005-00 [ICS,7]; A01H0005-10 [ICS,7]
	IPCR	C12N0015-82 [I,C*]; C12N0015-82 [I,A]; C12N0015-84 [I,C*]; C12N0015-84 [I,A]
	NCL	800/294.000; 435/419.000; 435/427.000; 435/430.000; 435/430.100; 435/469.000; 800/260.000; 800/278.000; 800/314.000
	ECLA	C12N015/82A4B
MX 2001011871	IPCI	C12N0015-82 [ICM,6]

10/810211

ZA 2001009521 ECLA C12N015/82A4B  
IPCI C12N [ICM,7]  
ECLA C12N015/82A4B  
IN 2001CN01741 IPCI C12N0015-82 [ICM,7]

ABSTRACT:

This invention relates to improved methods for the production of transgenic cotton plants, comprising cocultivating *Agrobacterium* cells comprising a DNA fragment of interest operably linked to at least one T-DNA border with cotton embryogenic callus in the presence of a plant phenolic compound

SUPPL. TERM: *agrobacterium* mediated transformation transgenic cotton  
prepn

INDEX TERM: DNA  
ROLE: AGR (Agricultural use); BUU (Biological use,  
unclassified); BIOL (Biological study); USES (Uses)  
(T, linked to DNA fragments for transformation; improved  
method for *agrobacterium* mediated  
transformation of cotton)

INDEX TERM: Embryo, plant  
(callus of; improved method for *agrobacterium*  
mediated transformation of cotton)

INDEX TERM: Plant tissue  
(callus, embryogenic, of cotton; improved  
method for *agrobacterium* mediated  
transformation of cotton)

INDEX TERM: Phenols, biological studies  
ROLE: AGR (Agricultural use); BUU (Biological use,  
unclassified); BIOL (Biological study); USES (Uses)  
(compound, for DNA transformation in plants;  
improved method for *agrobacterium* mediated  
transformation of cotton)

INDEX TERM: Organ, plant  
(hypocotyl, of a cotton seedling,  
embryogenic callus from; improved method for  
*agrobacterium* mediated transformation of  
cotton)

INDEX TERM: DNA  
ROLE: AGR (Agricultural use); BUU (Biological use,  
unclassified); BIOL (Biological study); USES (Uses)  
(linked to T-DNA for transformation; improved method for  
*agrobacterium* mediated transformation of  
cotton)

INDEX TERM: *Agrobacterium*  
*Agrobacterium tumefaciens*  
(mediated DNA transformation in plants;  
improved method for *agrobacterium* mediated  
transformation of cotton)

INDEX TERM: Transformation, genetic  
(mediated by *agrobacterium*; improved method for  
*agrobacterium* mediated transformation of  
cotton)

INDEX TERM: Cotton (*Gossypium barbadense*)  
Plant (Embryophyta)  
(transgenic; improved method for *agrobacterium*  
mediated transformation of cotton)

INDEX TERM: 87-66-1, Pyrogalllic acid 89-86-1,  $\beta$ -Resorcylic acid  
99-50-3, Protocatechuic acid 99-96-7, p-Hydroxybenzoic  
acid, biological studies 120-80-9, Catechol, biological  
studies 121-33-5, Vanillin 149-91-7, Gallic  
acid, biological studies 530-57-4, Syringic acid

530-59-6, Sinapinic acid 1135-24-6, Ferulic acid  
 2478-38-8, Acetosyringone 90426-22-5,  
 $\alpha$ -Hydroxy-acetosyringone  
 ROLE: AGR (Agricultural use); BUU (Biological use,  
 unclassified); BIOL (Biological study); USES (Uses)  
 (phenolic compound, for DNA transformation in  
 plants; improved method for agrobacterium  
 mediated transformation of cotton)

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

DATE LAST CITED: Date last citing reference entered STN: 16 Feb 2009

OS.CITING.REFS: CAPLUS 2003:396514

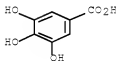
REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD.

REFERENCE(S): (1) Calgene Inc; WO 9712512 A 1997  
 (2) Chair, H; Kasetart Journal Natural Sciences 1997, V31, P149  
 (3) Firoozabady; Plant Molecular Biology 1987, V10, P105 ZCAPLUS  
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 (6) Hoshino, Y; Plant Biotechnol (Tokyo) 1998, V15(1), P29 ZCAPLUS  
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IT 149-91-7, Gallic acid, biological studies 530-57-4,  
 Syringic acid  
 RL: AGR (Agricultural use); BUU (Biological use, unclassified);  
 BIOL (Biological study); USES (Uses)  
 (phenolic compound, for DNA transformation in plants; improved  
 method for agrobacterium mediated transformation of  
 cotton)

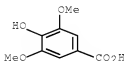
RN 149-91-7 ZCAPLUS

CN Benzoic acid, 3,4,5-trihydroxy- (CA INDEX NAME)



RN 530-57-4 ZCAPLUS

CN Benzoic acid, 4-hydroxy-3,5-dimethoxy- (CA INDEX NAME)





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L92 ANSWER 18 OF 27 ZCAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2000:688013 ZCAPLUS Full-text  
 DOCUMENT NUMBER: 133:248394  
 ENTRY DATE: Entered STN: 29 Sep 2000  
 TITLE: Preparation of benzoate and benzyl derivatives insect repellents for conifer sapling protection  
 INVENTOR(S): Nordlander, Goran; Nordenhem, Henrik; Borg-Karlson, Anna-karin; Unelius, Rikard  
 PATENT ASSIGNEE(S): Swed.  
 SOURCE: PCT Int. Appl., 42 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 INT. PATENT CLASSIF.:  
 MAIN: A01N037-10  
 SECONDARY: A01N031-06; A01N043-30; A01N037-18  
 CLASSIFICATION: 5-4 (Agrochemical Bioregulators)  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000056152	A1	20000928	WO 2000-SE580	20000323 <--
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
SE 9901062	A	20000924	SE 1999-1062	19990323 <--
SE 515989	C2	20011105		
CA 2365998	A1	20000928	CA 2000-2365998	20000323 <--
EP 1162885	A1	20011219	EP 2000-921251	20000323 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
NO 2001004590	A	20011024	NO 2001-4590	20010921 <--
PRIORITY APPLN. INFO.:			SE 1999-1062	A 19990323 <--
			WO 2000-SE580	W 20000323 <--

## PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2000056152	ICM	A01N037-10
	ICS	A01N031-06; A01N043-30; A01N037-18
	IPCI	A01N0037-10 [ICM,7]; A01N0031-06 [ICS,7]; A01N0031-00 [ICS,7,C*]; A01N0043-30 [ICS,7]; A01N0043-02 [ICS,7,C*]; A01N0037-18 [ICS,7]
	IPCR	A01N0031-00 [I,C*]; A01N0031-16 [I,A]; A01N0037-36 [I,C*]; A01N0037-38 [I,A]; A01N0037-40 [I,A]; A01N0037-44 [I,C*]; A01N0037-48 [I,A]; A01N0043-02 [I,C*]; A01N0043-28 [I,A]
	ECLA	A01N031/16; A01N037/38; A01N037/40; A01N037/48; A01N043/28
SE 9901062	IPCI	A01N0037-10 [ICM,7]; A01N0031-06 [ICS,7]; A01N0031-00 [ICS,7,C*]; A01N0043-30 [ICS,7]; A01N0043-02 [ICS,7,C*]
	IPCR	A01N0031-00 [I,C*]; A01N0031-16 [I,A]; A01N0037-36 [I,C*]; A01N0037-38 [I,A]; A01N0037-40 [I,A]; A01N0037-44 [I,C*]; A01N0037-48 [I,A]; A01N0043-02 [I,C*]; A01N0043-28 [I,A]

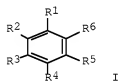
10/810211

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CA 2365998	IPCI	A01N0037-10 [ICM,7]; A01N0031-06 [ICS,7]; A01N0031-00 [ICS,7,C*]; A01N0037-18 [ICS,7]; A01N0043-30 [ICS,7]; A01N0043-02 [ICS,7,C*]
	IPCR	A01N0031-00 [I,C*]; A01N0031-16 [I,A]; A01N0037-36 [I,C*]; A01N0037-38 [I,A]; A01N0037-40 [I,A]; A01N0037-44 [I,C*]; A01N0037-48 [I,A]; A01N0043-02 [I,C*]; A01N0043-28 [I,A]
	ECLA	A01N031/16; A01N037/38; A01N037/40; A01N037/48; A01N043/28
EP 1162885	IPCI	A01N0037-10 [ICM,6]; A01N0031-06 [ICS,6]; A01N0031-00 [ICS,6,C*]; A01N0043-30 [ICS,6]; A01N0043-02 [ICS,6,C*]; A01N0037-18 [ICS,6]
	IPCR	A01N0031-00 [I,C*]; A01N0031-16 [I,A]; A01N0037-36 [I,C*]; A01N0037-38 [I,A]; A01N0037-40 [I,A]; A01N0037-44 [I,C*]; A01N0037-48 [I,A]; A01N0043-02 [I,C*]; A01N0043-28 [I,A]
	ECLA	A01N031/16; A01N037/38; A01N037/40; A01N037/48; A01N043/28
NO 2001004590	IPCI	A01N0037-110 [ICM,7]
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	ECLA	A01N031/16; A01N037/38; A01N037/40; A01N037/48; A01N043/28

OTHER SOURCE(S):

MARPAT 133:248394

GRAPHIC IMAGE:



# ABSTRACT:

The benzoate and benzyl derivs. I (R1, R2, R3, R4, R5 = H, OH, (un)substituted alkyl, alkoxy, etc.; R6 = (un)substituted alkyl, alkoxy, etc.) are prepared as insect repellents for protection of conifer sapling against pine weevils.

SUPPL. TERM: insect repellent prepn conifer sapling pine weevil

INDEX TERM: Insect repellents  
(for conifer sapling protection)

INDEX TERM: Hylastes brunneus  
Hylastes cunicularius  
Hylobius abietis  
Hylobius congener  
Hylobius pales  
Hylobius pinastri  
Pachylobius piceivorus  
(insect repellents for conifer sapling protection  
against)

INDEX TERM: Conifer  
(sapling; insect repellents for protection of)

INDEX TERM: 93-07-2, 3,4-Dimethoxybenzoic acid 93-15-2, Methyl Eugenol  
 93-16-3, Methylisoeugenol 97-54-1, Isoeugenol  
 99-24-1, Methyl 3,4,5-trihydroxybenzoate 99-76-3,  
 Methyl 4-hydroxybenzoate 119-36-8, Methyl  
 2-hydroxybenzoate 306-08-1, Homovanillic acid 645-08-9,  
 3-Hydroxy-4-methoxybenzoic acid 705-76-0,  
 3,5-Dimethoxybenzyl alcohol 877-22-5,  
 2-Hydroxy-3-methoxybenzoic acid 1916-07-0, Methyl  
 3,4,5-trimethoxybenzoate 2150-37-0, Methyl  
 3,5-dimethoxybenzoate 2150-38-1, Methyl  
 3,4-dimethoxybenzoate 2150-42-7, Methyl  
 2,3-dimethoxybenzoate 2150-43-8, Methyl  
 3,4-dihydroxybenzoate 2150-44-9, Methyl  
 3,5-dihydroxybenzoate 2150-47-2, Methyl  
 2,4-dihydroxybenzoate 2612-02-4,  
 2-Hydroxy-5-methoxybenzoic acid 2702-58-1, Methyl  
 3,5-dinitrobenzoate 2905-82-0, Methyl  
 2-hydroxy-5-methoxybenzoate 3943-74-6, Methyl  
 4-hydroxy-3-methoxybenzoate 4191-73-5, Isopropyl  
 4-hydroxybenzoate 4670-10-4, 3,5-Dimethoxyphenylacetic  
 acid 4707-47-5, Methyl 2,4-dihydroxy-3,6-dimethylbenzoate  
 5446-02-6, Methyl 2-hydroxy-4-methoxybenzoate 6342-70-7,  
 Methyl 2-hydroxy-3-methoxybenzoate 6702-50-7, Methyl  
 3-hydroxy-4-methoxybenzoate 37908-98-8, Methyl  
 3-chloro-4-methoxybenzoate 51329-15-8, Methyl  
 3,5-dibromobenzoate 62435-37-4  
 ROLE: AGR (Agricultural use); BIOL (Biological  
 study); USES (Uses)  
 (insect repellent for conifer sapling protection)

INDEX TERM: 94-53-1, Piperonyllic acid 97-53-0, Eugenol  
 530-57-4, 3,5-Dimethoxy-4-hydroxybenzoic acid  
 1132-21-4, 3,5-Dimethoxybenzoic acid  
 ROLE: AGR (Agricultural use); RCT (Reactant); BIOL  
 (Biological study); RACT (Reactant or reagent); USES (Uses)  
 (insect repellent for conifer sapling protection)

INDEX TERM: 884-35-5P, Methyl 4-hydroxy-3,5-dimethoxybenzoate  
 72782-63-9P 120301-09-9P, N-Ethyl 3,5-dimethoxybenzamide  
 295784-21-3P 295784-23-5P 295784-24-6P 295784-25-7P  
 295784-26-8P 295784-27-9P  
 ROLE: AGR (Agricultural use); SPN (Synthetic  
 preparation); BIOL (Biological study); PREP (Preparation);  
 USES (Uses)  
 (insect repellent for conifer sapling protection)

INDEX TERM: 1135-23-5  
 ROLE: RCT (Reactant); RACT (Reactant or reagent)  
 (insect repellent for conifer sapling protection)

INDEX TERM: 3929-47-3, 3-(3,4-Dimethoxyphenyl)-1-propanol  
 ROLE: AGR (Agricultural use); BIOL (Biological study); USES  
 (Uses)  
 (insect repellents for conifer sapling protection)

INDEX TERM: 326-56-7P, Methyl 3,4-methylenedioxybenzoate 2305-13-7P  
 ROLE: AGR (Agricultural use); SPN (Synthetic preparation);  
 BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (preparation as insect repellent for conifer sapling  
 protection)

INDEX TERM: 67-56-1, Methanol, reactions 75-04-7, Ethylamine,  
 reactions 75-08-1, Ethanethiol 75-89-8,  
 2,2,2-Trifluoroethanol 112-53-8, 1-Dodecanol 928-97-2  
 1849-29-2, Trideuteriomethanol 17213-57-9,  
 3,5-Dimethoxybenzoyl chloride

ROLE: RCT (Reactant); RACT (Reactant or reagent)  
(reactant in preparation of insect repellents for conifer  
sapling protection)

OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (4  
CITINGS)

DATE LAST CITED: Date last citing reference entered STN: 16 Feb 2009

OS.CITING.REFS: CAPLUS 2007:1138534; 2002:157486; 2002:10202; 2001:849597

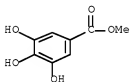
REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS  
RECORD.

REFERENCE(S): (1) Anon; JP A56115206 1981  
(2) Borden; US 6051612 A 2000 ZCAPLUS  
(3) Hayes; US 5518757 A 1996 ZCAPLUS  
(4) Hayes; US 5695807 A 1997 ZCAPLUS  
(5) Hayes, J; US 5403863 A 1995 ZCAPLUS  
(6) Inazuka; US 4219570 A 1980 ZCAPLUS  
(7) Maier-Bode, H; DE 696347 C 1940 ZCAPLUS  
(8) Mattsson; SE 7709013 A 1979  
(9) Octrooibureau Kisch N V; WO 9853678 A2 1998 ZCAPLUS

IT 99-24-1, Methyl 3,4,5-trihydroxybenzoate  
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)  
(insect repellent for conifer sapling protection)

RN 99-24-1 ZCAPLUS

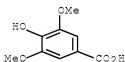
CN Benzoic acid, 3,4,5-trihydroxy-, methyl ester (CA INDEX NAME)



IT 530-57-4, 3,5-Dimethoxy-4-hydroxybenzoic acid  
RL: AGR (Agricultural use); RCT (Reactant); BIOL (Biological  
study); RACT (Reactant or reagent); USES (Uses)  
(insect repellent for conifer sapling protection)

RN 530-57-4 ZCAPLUS

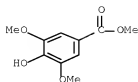
CN Benzoic acid, 4-hydroxy-3,5-dimethoxy- (CA INDEX NAME)



IT 884-35-5F, Methyl 4-hydroxy-3,5-dimethoxybenzoate  
RL: AGR (Agricultural use); SPN (Synthetic preparation); BIOL  
(Biological study); PREP (Preparation); USES (Uses)  
(insect repellent for conifer sapling protection)

RN 884-35-5 ZCAPLUS

CN Benzoic acid, 4-hydroxy-3,5-dimethoxy-, methyl ester (CA INDEX NAME)



L92 ANSWER 19 OF 27 ZCAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2000:300759 ZCAPLUS Full-text  
 DOCUMENT NUMBER: 132:289952  
 ENTRY DATE: Entered STN: 09 May 2000  
 TITLE: Germination stimulants for Plasmodiophora brassicae and prevention of cruciferous vegetables from the fungal infection  
 INVENTOR(S): Ohi, Michio; Hatake, Shuichi  
 PATENT ASSIGNEE(S): Tama Biochemical Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 INT. PATENT CLASSIF.:  
 MAIN: A01N031-16  
 SECONDARY: A01N025-00; A01N037-38; A01N037-40; A01N043-08; A01N043-16; A01N065-00  
 CLASSIFICATION: 5-2 (Agrochemical Bioregulators)  
 Section cross-reference(s): 10  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000128708	A	20000509	JP 1998-298322	19981020 <--
			JP 1998-298322	19981020 <--

PRIORITY APPLN. INFO.:

PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2000128708	ICM	A01N031-16
	ICS	A01N025-00; A01N037-38; A01N037-40; A01N043-08; A01N043-16; A01N065-00
	IPCI	A01N0031-16 [ICM,7]; A01N0025-00 [ICS,7]; A01N0037-38 [ICS,7]; A01N0037-40 [ICS,7]; A01N0043-08 [ICS,7]; A01N0043-16 [ICS,7]; A01N0065-00 [ICS,7]
	IPCR	A01N0025-00 [I,C*]; A01N0025-00 [I,A]; A01N0031-00 [I,C*]; A01N0031-16 [I,A]; A01N0037-36 [I,C*]; A01N0037-38 [I,A]; A01N0037-40 [I,A]; A01N0043-02 [I,C*]; A01N0043-08 [I,A]; A01N0043-16 [I,A]; A01N0065-00 [I,C]; A01N0065-00 [I,A]; A01N0065-30 [I,C]; A01N0065-30 [I,A]

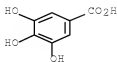
#### ABSTRACT:

The germination stimulants contain compds. having phenol or pyrone structure, e.g.caffeic acid, tannic acid, corilagin, flavone, coumalic acid, etc., or materials containing the compds. Cruciferous vegetables are prevented from infection with the fungi by previously treating P. brassicae spores with the above compds. or materials in the absence of the plants. Germinated fungi can not grow because there is no Cruciferae root as hosts. A spore suspension

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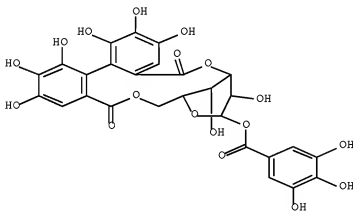
of *P. brassicae* was incubated with caffeic acid at 25° for 7 days. The culture was added to soil and Chinese cabbage was cultivated on the soil for 35 days. No root knots were observed

SUPPL. TERM: Plasmodiophora germination stimulant phenol compd Cruciferae root knot prevention; Brassicaceae prevention root knot  
INDEX TERM: Plasmodiophora germination stimulation caffeic acid  
Buckwheat (*Fagopyrum esculentum*)  
(husk; prevention of cruciferous vegetables from root knot by previously treating *Plasmodiophora brassicae* spores with phenol or pyrone compds. in plant-free condition)  
INDEX TERM: Phenols, biological studies  
ROLE: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)  
(polyphenols, nonpolymeric; prevention of cruciferous vegetables from root knot by previously treating *Plasmodiophora brassicae* spores with phenol or pyrone compds. in plant-free condition)  
INDEX TERM: Chinese cabbage  
Cruciferae (Brassicaceae)  
*Plasmodiophora brassicae*  
Spore germination  
(prevention of cruciferous vegetables from root knot by previously treating *Plasmodiophora brassicae* spores with phenol or pyrone compds. in plant-free condition)  
INDEX TERM: Phenols, biological studies  
Tannins  
ROLE: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)  
(prevention of cruciferous vegetables from root knot by previously treating *Plasmodiophora brassicae* spores with phenol or pyrone compds. in plant-free condition)  
INDEX TERM: 117-39-5, Quercetin 149-91-7, Gallic acid, biological studies 154-23-4, Catechol 331-39-5, Caffeic acid 500-05-0, Coumalic acid 525-82-6, Flavone 23094-69-1, Corilagin  
ROLE: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)  
(prevention of cruciferous vegetables from root knot by previously treating *Plasmodiophora brassicae* spores with phenol or pyrone compds. in plant-free condition)  
IT 149-91-7, Gallic acid, biological studies 23094-69-1, Corilagin  
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)  
(prevention of cruciferous vegetables from root knot by previously treating *Plasmodiophora brassicae* spores with phenol or pyrone compds. in plant-free condition)  
RN 149-91-7 ZCAPLUS  
CN Benzoic acid, 3,4,5-trihydroxy- (CA INDEX NAME)



RN 23094-69-1 ZCAPLUS

CN  $\beta$ -D-Glucopyranose, cyclic 3,6-[(1R)-4,4',5,5',6,6'-hexahydroxy[1,1'-biphenyl]-2,2'-dicarboxylate] 1-(3,4,5-trihydroxybenzoate) (CA INDEX NAME)



L92 ANSWER 20 OF 27 ZCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1999:331243 ZCAPLUS Full-text

DOCUMENT NUMBER: 130:348547

ENTRY DATE: Entered STN: 28 May 1999

TITLE: Biocidal compositions containing metal compounds, alkanolamines, and phenols or aromatic amines, and their use

INVENTOR(S): Aoki, Hiroshi; Tanaka, Kazumi; Echigo, Takashi

PATENT ASSIGNEE(S): Showa Denko K. K., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 20 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

INT. PATENT CLASSIF.:

MAIN: A01N033-08

SECONDARY: A01N031-16; A01N037-10; A01N037-12; A01N033-08;

A01N059-16; A01N059-20; A01N059-06; A01N031-08;

A01N033-06

CLASSIFICATION: 5-2 (Agrochemical Bioregulators)

Section cross-reference(s): 43, 57

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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10/810211

JP 11139905 A 19990525 JP 1997-308462 19971111 <--  
 PRIORITY APPLN. INFO.: JP 1997-308462 19971111 <--

## PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 11139905	ICM	A01N033-08
	ICS	A01N031-16; A01N037-10; A01N037-12; A01N033-08; A01N059-16; A01N059-20; A01N059-06; A01N031-08; A01N033-06
	IPCI	A01N0033-08 [ICM,6]; A01N0031-16 [ICS,6]; A01N0037-10 [ICS,6]; A01N0037-12 [ICS,6]; A01N0033-08 [ICS,6]; A01N0059-16 [ICS,6]; A01N0059-20 [ICS,6]; A01N0059-06 [ICS,6]; A01N0031-08 [ICS,6]; A01N0033-06 [ICS,6]
	IPCR	A01N0031-00 [I,C*]; A01N0031-16 [I,A]; A01N0033-00 [I,C*]; A01N0033-08 [I,A]; A01N0037-10 [I,A]; A01N0037-12 [I,C*]; A01N0037-12 [I,A]; A01N0037-12 [I,C*]

## ABSTRACT:

Title compns., which are applied to objects (e.g. porous materials such as alloys, ceramics, woods, fibers, plastic foams, etc.) by coating and/or impregnation, contain metal compds., alkanolamines, and phenolic compds. and/or aromatic amines. Ethanolamine 1.2, pyrogallol 0.25, CuSO<sub>4</sub>·5H<sub>2</sub>O 2.5, and polyphenol oxidase (of *Myrothecium verrucaria* SD 3001) 0.004 g were dissolved into H<sub>2</sub>O to give a biocide. A Japanese cedar test piece was soaked into the biocide, washed with H<sub>2</sub>O, and inoculated with *Tyromyces palustris* to result in 1.6% weight loss, vs. 32.4%, for control.

SUPPL. TERM: biocide metal compd alkanolamine phenol; wood preservative copper sulfate ethanolamine pyrogallol; arom amine biocide metal compd alkanolamine; porous material biocide metal alkanolamine phenol

INDEX TERM: Alcohols, biological studies  
 ROLE: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
 (amino; biocidal compns. containing metal compds., alkanolamines, and phenols or aromatic amines)

INDEX TERM: Amines, biological studies  
 ROLE: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
 (aromatic; biocidal compns. containing metal compds., alkanolamines, and phenols or aromatic amines)

INDEX TERM: Wood  
 (bamboo; biocidal compns. containing metal compds., alkanolamines, and phenols or aromatic amines for)

INDEX TERM: Biocides  
 Termiticides  
 Wood preservatives  
 (biocidal compns. containing metal compds., alkanolamines, and phenols or aromatic amines)

INDEX TERM: Phenols, biological studies  
 Tannins  
 ROLE: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
 (biocidal compns. containing metal compds., alkanolamines, and phenols or aromatic amines)

INDEX TERM: Bricks  
 Ceramics  
 Concrete  
 Porous materials  
 Rush



Straw  
Wood  
    (biocidal compns. containing metal compds.,  
    alkanolamines, and phenols or aromatic amines for)

INDEX TERM: Alloys, miscellaneous  
Charcoal  
Fibers  
Plastic foams  
ROLE: MSC (Miscellaneous)  
    (biocidal compns. containing metal compds.,  
    alkanolamines, and phenols or aromatic amines for)

INDEX TERM: Wood  
    (flour; biocidal compns. containing metal compds.,  
    alkanolamines, and phenols or aromatic amines for)

INDEX TERM: Oxidation catalysts  
    (for polyphenols; biocidal compns. containing metal  
    compds., alkanolamines, and phenols or aromatic amines)

INDEX TERM: Rice (*Oryza sativa*)  
    (hulls; biocidal compns. containing metal compds.,  
    alkanolamines, and phenols or aromatic amines for)

INDEX TERM: 7439-92-1D, Lead, compds., biological studies 7439-95-4D,  
Magnesium, compds., biological studies 7439-96-5D,  
Manganese, compds., biological studies 7439-98-7D,  
Molybdenum, compds., biological studies 7440-02-0D,  
Nickel, compds., biological studies 7440-05-3D, Palladium,  
compds., biological studies 7440-22-4D, Silver, compds.,  
biological studies 7440-24-6D, Strontium, compds.,  
biological studies 7440-31-5D, Tin, compds., biological  
studies 7440-32-6D, Titanium, compds., biological studies  
7440-36-0D, Antimony, compds., biological studies  
7440-39-3D, Barium, compds., biological studies  
7440-43-9D, Cadmium, compds., biological studies  
7440-47-3D, Chromium, compds., biological studies  
7440-48-4D, Cobalt, compds., biological studies  
7440-62-2D, Vanadium, compds., biological studies  
7440-67-7D, Zirconium, compds., biological studies  
7440-70-2D, Calcium, compds., biological studies  
7446-70-0, Aluminum chloride, biological studies  
7646-85-7, Zinc chloride, biological studies 7720-78-7,  
Iron(II) sulfate 7758-98-7, Copper(II) sulfate, biological  
studies 20427-59-2, Copper(II) hydroxide 36386-77-3,  
Copper(II) carbonate  
ROLE: BAC (Biological activity or effector, except adverse);  
BSU (Biological study, unclassified); BUU (Biological use,  
unclassified); BIOL (Biological study); USES (Uses)  
    (biocidal compns. containing metal compds.,  
    alkanolamines, and phenols or aromatic amines)

INDEX TERM: 87-66-1, Pyrogallol 102-71-6, Triethanolamine, biological  
studies 111-42-2, biological studies 120-80-9,  
1,2-Benzenediol, biological studies 123-31-9,  
1,4-Benzenediol, biological studies 141-43-5, biological  
studies 149-91-7, Gallic acid, biological  
studies 8062-15-5, Ligninsulfonic acid 9005-53-2,  
Lignin, biological studies  
ROLE: BUU (Biological use, unclassified); BIOL (Biological  
study); USES (Uses)  
    (biocidal compns. containing metal compds.,  
    alkanolamines, and phenols or aromatic amines)

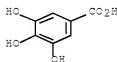
INDEX TERM: 9002-10-2, Catechol oxidase 9003-99-0, Peroxidase  
9029-44-1, Ascorbate oxidase 80498-15-3, Laccase

80619-01-8, Bilirubin oxidase  
 ROLE: CAT (Catalyst use); USES (Uses)  
 (polyphenol oxidation catalyst; biocidal compns.  
 containing metal compds., alkanolamines, and phenols or

aromatic

amines)

IT 149-91-7, Gallic acid, biological studies  
 RL: BUU (Biological use, unclassified); BIOL (Biological study); USES  
 (Uses)  
 (biocidal compns. containing metal compds., alkanolamines, and  
 phenols or aromatic amines)  
 RN 149-91-7 ZCAPLUS  
 CN Benzoic acid, 3,4,5-trihydroxy- (CA INDEX NAME)



L92 ANSWER 21 OF 27 ZCAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 1998:605018 ZCAPLUS Full-text  
 DOCUMENT NUMBER: 129:198884  
 ORIGINAL REFERENCE NO.: 129:40295a,40298a  
 ENTRY DATE: Entered STN: 24 Sep 1998  
 TITLE: Increasing the efficiency of integrative  
 transformation of monocotyledonous plants by  
 stimulation of cell division  
 INVENTOR(S): D'Halluin, Kathleen  
 PATENT ASSIGNEE(S): Plant Genetic Systems, N.V., Belg.  
 SOURCE: PCT Int. Appl., 43 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 INT. PATENT CLASSIF.:  
 MAIN: C12N015-82  
 SECONDARY: C12N005-04  
 CLASSIFICATION: 3-2 (Biochemical Genetics)  
 Section cross-reference(s): 11  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9837212	A1	19980827	WO 1998-IB220	19980220 <--
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
CA 2252612	A1	19980827	CA 1998-2252612	19980220 <--
AU 9860027	A	19980909	AU 1998-60027	19980220 <--
AU 727570	B2	20001214		

10/810211

EP 900279	A1	19990310	EP 1998-903214	19980220 <--
EP 900279	B1	20040929		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
CN 1222939	A	19990714	CN 1998-800476	19980220 <--
CN 1155715	C	20040630		
BR 9805900	A	19990824	BR 1998-5900	19980220 <--
JP 2000509612	T	20000802	JP 1998-536435	19980220 <--
JP 4199312	B2	20081217		
US 6140553	A	20001031	US 1998-26673	19980220 <--
AT 278026	T	20041015	AT 1998-903214	19980220 <--
ES 2229472	T3	20050416	ES 1998-903214	19980220 <--
US 6372963	B1	20020416	US 2000-480142	20000110 <--
PRIORITY APPLN. INFO.:				
			US 1997-135507P	P 19970220 <--
			US 1997-808988	A 19970220 <--
			EP 1990-403332	A 19901123 <--
			US 1998-26673	A3 19980220 <--
			WO 1998-IB220	W 19980220 <--

## PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 9837212	ICM	C12N015-82
	ICS	C12N005-04
	IPCI	C12N0015-82 [ICM,6]; C12N0005-04 [ICS,6]
	IPCR	C12N0015-09 [I,C*]; C12N0015-09 [I,A]; A01H0001-00 [I,C*]; A01H0001-00 [I,A]; C12N0005-10 [I,C*]; C12N0005-10 [I,A]; C12N0015-29 [I,C*]; C12N0015-29 [I,A]; C12N0015-82 [I,C*]; C12N0015-82 [I,A]; C12N0015-84 [I,C*]; C12N0015-84 [I,A]
CA 2252612	ECLA	C12N015/82A; C12N015/82A4B
	IPCI	C12N0015-82 [ICM,6]; C12N0005-04 [ICS,6]
	IPCR	C12N0015-09 [I,C*]; C12N0015-09 [I,A]; A01H0001-00 [I,C*]; A01H0001-00 [I,A]; C12N0005-10 [I,C*]; C12N0005-10 [I,A]; C12N0015-29 [I,C*]; C12N0015-29 [I,A]; C12N0015-82 [I,C*]; C12N0015-82 [I,A]; C12N0015-84 [I,C*]; C12N0015-84 [I,A]
AU 9860027	ECLA	C12N015/82A; C12N015/82A4B
	IPCI	C12N0015-82 [ICM,6]; C12N0005-04 [ICS,6]
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EP 900279	ECLA	C12N015/82A; C12N015/82A4B
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CN 1222939	ECLA	C12N015/82A; C12N015/82A4B
	IPCI	C12N0015-82 [ICM,6]; C12N0005-04 [ICS,7]; C12N0015-82 [ICS,7]
	IPCR	C12N0015-09 [I,C*]; C12N0015-09 [I,A]; A01H0001-00 [I,C*]; A01H0001-00 [I,A]; C12N0005-10 [I,C*]; C12N0005-10 [I,A]; C12N0015-29 [I,C*]; C12N0015-29 [I,A]; C12N0015-82 [I,C*]; C12N0015-82 [I,A]; C12N0015-84 [I,C*]; C12N0015-84 [I,A]
BR 9805900	ECLA	C12N015/82A; C12N015/82A4B
	IPCI	C12N0015-82 [ICM,6]; C12N0005-04 [ICS,6]

JP 2000509612	IPCR	C12N0015-09 [I,C*]; C12N0015-09 [I,A]; A01H0001-00 [I,C*]; A01H0001-00 [I,A]; C12N0005-10 [I,C*]; C12N0005-10 [I,A]; C12N0015-29 [I,C*]; C12N0015-29 [I,A]; C12N0015-82 [I,C*]; C12N0015-82 [I,A]; C12N0015-84 [I,C*]; C12N0015-84 [I,A]
	ECLA	C12N015/82A; C12N015/82A4B
	IPCI	A01H0005-00 [I,A]; C12N0015-09 [N,A]; C12N0005-10 [N,A]; C12N0001-21 [N,A]
	IPCR	C12N0015-09 [I,C*]; C12N0015-09 [I,A]; A01H0001-00 [I,C*]; A01H0001-00 [I,A]; C12N0005-10 [I,C*]; C12N0005-10 [I,A]; C12N0015-29 [I,C*]; C12N0015-29 [I,A]; C12N0015-82 [I,C*]; C12N0015-82 [I,A]; C12N0015-84 [I,C*]; C12N0015-84 [I,A]; A01H0005-00 [I,C]; A01H0005-00 [I,A]; C12N0001-21 [N,C]; C12N0001-21 [N,A]
US 6140553	ECLA	C12N015/82A; C12N015/82A4B
	IPCI	C12N0015-00 [ICM]; C12N0015-29 [ICS]; C12N0015-82 [ICS]; A01H0004-00 [ICS]
	IPCR	C12N0015-09 [I,C*]; C12N0015-09 [I,A]; A01H0001-00 [I,C*]; A01H0001-00 [I,A]; C12N0005-10 [I,C*]; C12N0005-10 [I,A]; C12N0015-29 [I,C*]; C12N0015-29 [I,A]; C12N0015-82 [I,C*]; C12N0015-82 [I,A]; C12N0015-84 [I,C*]; C12N0015-84 [I,A]
	NCL	800/278.000; 435/320.100; 435/419.000; 435/468.000; 536/023.600; 536/023.700; 536/024.100; 800/295.000; 800/298.000
AT 278026	ECLA	C12N015/82A; C12N015/82A4B
	IPCI	C12N0015-82 [ICM,7]; C12N0005-04 [ICS,7]
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ES 2229472	IPCR	C12N0015-09 [I,C*]; C12N0015-09 [I,A]; A01H0001-00 [I,C*]; A01H0001-00 [I,A]; C12N0005-10 [I,C*]; C12N0005-10 [I,A]; C12N0015-29 [I,C*]; C12N0015-29 [I,A]; C12N0015-82 [I,C*]; C12N0015-82 [I,A]; C12N0015-84 [I,C*]; C12N0015-84 [I,A]
	ECLA	C12N015/82A; C12N015/82A4B
	IPCI	C12N0005-04 [ICM]; C12N0005-10 [ICS]; C12N0015-84 [ICS]; A01H0001-00 [ICS]
	IPCR	C12N0015-09 [I,C*]; C12N0015-09 [I,A]; A01H0001-00 [I,C*]; A01H0001-00 [I,A]; C12N0005-10 [I,C*]; C12N0005-10 [I,A]; C12N0015-29 [I,C*]; C12N0015-29 [I,A]; C12N0015-82 [I,C*]; C12N0015-82 [I,A]; C12N0015-84 [I,C*]; C12N0015-84 [I,A]
US 6372963	ECLA	C12N015/82A; C12N015/82A4B
	IPCI	C12N0005-04 [ICM]; C12N0005-10 [ICS]; C12N0015-84 [ICS]; A01H0001-00 [ICS]
	IPCR	C12N0015-09 [I,C*]; C12N0015-09 [I,A]; A01H0001-00 [I,C*]; A01H0001-00 [I,A]; C12N0005-10 [I,C*]; C12N0005-10 [I,A]; C12N0015-29 [I,C*]; C12N0015-29 [I,A]; C12N0015-82 [I,C*]; C12N0015-82 [I,A]; C12N0015-84 [I,C*]; C12N0015-84 [I,A]
	NCL	800/294.000; 435/419.000; 435/420.000; 435/469.000; 800/298.000
	ECLA	C12N015/82A; C12N015/82A4B

## ABSTRACT:

A method for increasing the efficiency of integrative transformation of monocotyledonous plants, especially cereals, by stimulation of cell division with plant phenolic compds. immediately prior to transformation is described. After stimulation of cell division, transformation can be by standard phys. or biol. methods. Preferred phenolic compds. include  $\alpha$ -hydroxy-acetosyringone, syringic acid, ferulic acid, vanillin and related compds. Type I corn callus was transformed using *Agrobacterium*. Pretreatment of callus with 100-200  $\mu$ M acetosyringone for 5 days followed by transformation in the presence of 100-200  $\mu$ M acetosyringone led to transformation rates of 0.3-0.9% vs. <0.1% for control cells. Presence of a functional *virB11* gene on the transforming plasmid increased the efficiency of transformation.

10/810211

SUPPL. TERM: monocot transformation cell division phenols; catechol  
monocot transformation cell division

INDEX TERM: DNA  
ROLE: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
(T; increasing efficiency of integrative transformation of monocotyledonous plants by stimulation of cell division)

INDEX TERM: Plant tissue  
(callus, transformation of; increasing efficiency of integrative transformation of monocotyledonous plants by stimulation of cell division)

INDEX TERM: Cell division  
Monocotyledon (Liliopsida)  
Transformation, genetic  
(increasing efficiency of integrative transformation of monocotyledonous plants by stimulation of cell division)

INDEX TERM: DNA sequences  
(of T-DNAs; increasing efficiency of integrative transformation of monocotyledonous plants by stimulation of cell division)

INDEX TERM: Plasmid vectors  
(pGSV1, for transformation of monocots; increasing efficiency of integrative transformation of monocotyledonous plants by stimulation of cell division)

INDEX TERM: Plasmid vectors  
(pTCO114, for transformation of monocots; increasing efficiency of integrative transformation of monocotyledonous plants by stimulation of cell division)

INDEX TERM: Plasmid vectors  
(pTCO121, for transformation of monocots; increasing efficiency of integrative transformation of monocotyledonous plants by stimulation of cell division)

INDEX TERM: Plasmid vectors  
(pVE200, for transformation of monocots; increasing efficiency of integrative transformation of monocotyledonous plants by stimulation of cell division)

INDEX TERM: Plant tissue culture  
(stimulation of cell division in; increasing efficiency of integrative transformation of monocotyledonous plants by stimulation of cell division)

INDEX TERM: Flavonols  
Phenols, biological studies  
ROLE: BAC (Biological activity or effector, except adverse);  
BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
(stimulation of plant cell division by;  
increasing efficiency of integrative transformation of monocotyledonous plants by stimulation of cell division)

INDEX TERM: Agrobacterium tumefaciens  
(transformation of monocots using; increasing efficiency of integrative transformation of monocotyledonous plants by stimulation of cell division)

10/810211

INDEX TERM: Barley  
Corn  
Rice (*Oryza sativa*)  
Wheat  
(transformation of; increasing efficiency of integrative transformation of monocotyledonous plants by stimulation of cell division)

INDEX TERM: Gene, microbial  
ROLE: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
(virB11, in T-DNA-mediated transformation; increasing efficiency of integrative transformation of monocotyledonous plants by stimulation of cell division)

INDEX TERM: 212194-19-9, DNA (plasmid pGV571 T-DNA plus flanks)  
212194-20-2 212194-21-3, DNA (plasmid pGV58 T-DNA plus flanks)  
ROLE: BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses)  
(nucleotide sequence; increasing efficiency of integrative transformation of monocotyledonous plants by stimulation of cell division)

INDEX TERM: 87-66-1D, Pyrogalllic acid, mixts. containing 89-86-1D,  $\beta$ -Resorcylic acid, mixts. containing 99-50-3D, Protocatechuic acid, mixts. containing 99-96-7D, mixts.

containing  
120-80-9D, Catechol, mixts. containing 121-33-5D, Vanillin, mixts. containing 149-91-7D, Gallic acid, mixts. containing 530-57-4D, Syringic acid, mixts. containing 530-59-6D, Sinapinic acid, mixts. containing 1135-24-6D, Ferulic acid, mixts. containing 2478-38-8D, Acetosyringone, mixts. containing 90426-22-5D,  $\alpha$ -Hydroxy-acetosyringone, mixts. containing  
ROLE: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
(stimulation of plant cell division with; increasing efficiency of integrative transformation of monocotyledonous plants by stimulation of cell division)

OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (4 CITINGS)

DATE LAST CITED: Date last citing reference entered STN: 16 Feb 2009

OS.CITING.REFS: CAPLUS 2002:793742; 2002:390488; 2000:842294; 2000:260560

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD.

REFERENCE(S): (1) Biocem Knittel Nathalie; WO 9506741 A 1995 ZCAPLUS  
(2) Bolton, G; SCIENCE 1986, V232, P983 ZCAPLUS  
(3) Cetus Corp; WO 8504899 A 1985 ZCAPLUS  
(4) Chang, H; BOTANICAL BULLETIN OF THE ACADEMIA SINICA 1991, V32, P171 ZCAPLUS  
(5) D'Halluin, K; THE PLANT CELL 1992, V4(12), P1495 ZCAPLUS  
(6) Gelvin, S; US 4954442 A 1990 ZCAPLUS  
(7) Goldman, S; US 5177010 A 1993 ZCAPLUS  
(8) Guivarc'H, A; PROTOPLASMA 1993, V174, P10 ZCAPLUS  
(9) Ishida, Y; BIO/TECHNOLOGY 1996, V14(6), P745 ZCAPLUS  
(10) Ohio State Res Found; WO 9732016 A 1997 ZCAPLUS

IT 149-91-7D, Gallic acid, mixts. containing 530-57-4D, Syringic acid, mixts. containing

RL: BAC (Biological activity or effector, except adverse); BSU (Biological

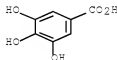
10/810211

study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)

(stimulation of plant cell division with; increasing efficiency of integrative transformation of monocotyledonous plants by stimulation of cell division)

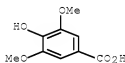
RN 149-91-7 ZCAPLUS

CN Benzoic acid, 3,4,5-trihydroxy- (CA INDEX NAME)



RN 530-57-4 ZCAPLUS

CN Benzoic acid, 4-hydroxy-3,5-dimethoxy- (CA INDEX NAME)



L92 ANSWER 22 OF 27 ZCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1998:457015 ZCAPLUS [Full-text](#)

DOCUMENT NUMBER: 129:212936

ORIGINAL REFERENCE NO.: 129:43171a,43174a

ENTRY DATE: Entered STN: 23 Jul 1998

TITLE: Field efficacy of *Verticillium lecanii*, sex pheromone, and pheromone analogs as potential management agents for soybean cyst nematode

AUTHOR(S): Meyer, S. L. F.; Johnson, G.; Dimock, M.; Fahey, J. W.; Huettel, R. N.

CORPORATE SOURCE: USDA ARS, Nematology Laboratory, Beltsville, MD, 20705-2350, USA

SOURCE: Journal of Nematology (1997), 29(3), 282-288

CODEN: JONEB5; ISSN: 0022-300X

PUBLISHER: Society of Nematologists

DOCUMENT TYPE: Journal

LANGUAGE: English

CLASSIFICATION: 5-4 (Agrochemical Bioregulators)

ABSTRACT:

A soybean cyst nematode sex pheromone (vanillic acid), chemical analogs of the pheromone, and the fungus *Verticillium lecanii* were applied in alginate prills (340 kg/ha) to microplots and small-scale field plots as potential management agents for *H. glycines* on soybean. In 1991 microplot tests, treatment with *V. lecanii*, vanillic acid, syringic acid plus *V. lecanii*, or vanillic acid plus *V. lecanii* lowered mid-season cyst nos., compared with the untreated susceptible cultivar control, autoclaved *V. lecanii* treatment, or aldicarb treatment. At-harvest cyst nos. were lowest with *V. lecanii* and with vanillic acid treatments. Aldicarb treatment reduced mid-season cyst nos. in 1992. There were no differences among seed yields either year. In the field

trials, nos. of cysts were reduced one or both years with aldicarb, ferulic acid, syringic acid, vanillic acid, or 4-hydroxy-3-methoxybenzotrile treatments, or with a resistant cultivar, compared to an untreated susceptible cultivar. Highest yields were recorded after treatment with 4-hydroxy-3-methoxybenzotrile (1991), Me vanillate (1992), and aldicarb (1992). These studies indicate that some chemical analogs of vanillic acid have potential for use in soybean cyst nematode management schemes.

SUPPL. TERM: nematocide Verticillium intergrated pest control Heterodera  
 INDEX TERM: Nematocides  
 Verticillium lecanii  
 (control of soybean cyst nematode by)  
 INDEX TERM: Heterodera glycines  
 Integrated pest control  
 (efficacy of Verticillium lecanii, sex pheromone, and  
 pheromone analogs for soybean cyst nematode  
 control)  
 INDEX TERM: 116-06-3, Aldicarb 121-34-6, (Vanillic acid)  
 530-57-4, Syringic acid 1135-24-6, Ferulic acid  
 4421-08-3, 4-Hydroxy-3-methoxybenzotrile  
 ROLE: AGR (Agricultural use); BIOL (Biological  
 study); USES (Uses)  
 (control of soybean cyst nematode by)

OS.CITING REF COUNT: 7 THERE ARE 7 CAPLUS RECORDS THAT CITE THIS RECORD (7 CITINGS)

DATE LAST CITED: Date last citing reference entered STN: 16 Feb 2009

OS.CITING.REFS: CAPLUS 2008:788138; 2006:399634; 2005:977838; 2003:669097;  
 2001:376639; 2000:492865; 1998:785095

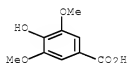
REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD.

REFERENCE(S): (1) Carris, L; Bulletin 786 1989  
 (2) Chen, S; Journal of Nematology 1994, V26, P296 MEDLINE  
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IT 530-57-4, Syringic acid  
 RL: AGR (Agricultural use); BIOL (Biological study); USES  
 (Uses)  
 (control of soybean cyst nematode by)  
 RN 530-57-4 ZCAPLUS  
 CN Benzoic acid, 4-hydroxy-3,5-dimethoxy- (CA INDEX NAME)



L92 ANSWER 23 OF 27 ZCAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 1998:347521 ZCAPLUS [Full-text](#)  
 DOCUMENT NUMBER: 129:105492  
 ORIGINAL REFERENCE NO.: 129:21589a,21592a  
 ENTRY DATE: Entered STN: 10 Jun 1998  
 TITLE: Application of a sex pheromone, pheromone analogs, and Verticillium lecanii for management of Heterodera glycines  
 AUTHOR(S): Meyer, S. L. F.; Huettel, R. N.  
 CORPORATE SOURCE: USDA ARS, Nematology Laboratory, Beltsville, MD, 20705-2350, USA  
 SOURCE: Journal of Nematology (1996), 28(1), 36-42  
 CODEN: JONEB5; ISSN: 0022-300X  
 PUBLISHER: Society of Nematologists  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 CLASSIFICATION: 5-4 (Agrochemical Bioregulators)  
 ABSTRACT:  
 A mutant strain of the fungus Verticillium lecanii and selected bioregulators of Heterodera glycines were evaluated for their potential to reduce population densities of the nematode on soybean under greenhouse conditions. The bioregulators tested were the H. glycines sex pheromone vanillic acid and the pheromone analogs syringic acid, isovanillic acid, ferulic acid, 4-hydroxy-3-methoxybenzonitrile, and Me vanillate. A V. lecanii-vanillic acid combination and a V. lecanii-syringic acid combination were also applied as treatments. Syringic acid, 4-hydroxy-3-methoxybenzonitrile, V. lecanii, V. lecanii-vanillic acid, and V. lecanii-syringic acid significantly reduced nematode population densities in the greenhouse tests. Results with vanillic acid, isovanillic acid, and ferulic acid treatments were variable. Me vanillate did not significantly reduce cyst nematode population densities.  
 SUPPL. TERM: sex pheromone Verticillium Heterodera nematocide soybean  
 INDEX TERM: Nematocides  
 (bio-; use of a sex pheromone, pheromone analogs, and

Verticillium lecanii for management of Heterodera  
glycines on soybean)

INDEX TERM: Pheromones, animal

ROLE: AGR (Agricultural use); BIOL (Biological study); USES  
(Uses)

(sex; use of a sex pheromone, pheromone analogs, and  
Verticillium lecanii for management of Heterodera  
glycines on soybean)

INDEX TERM: Heterodera glycines

Soybean (Glycine max)

Verticillium lecanii

(use of a sex pheromone, pheromone analogs, and  
Verticillium lecanii for management of Heterodera  
glycines on soybean)

INDEX TERM: 121-34-6, Vanillic acid 530-57-4, Syringic acid  
645-08-9, Isovanillic acid 1135-24-6, Ferulic acid  
4421-08-3, 4-Hydroxy-3-methoxybenzotrile

ROLE: AGR (Agricultural use); BIOL (Biological  
study); USES (Uses)

(use of a sex pheromone, pheromone analogs, and  
Verticillium lecanii for management of Heterodera  
glycines on soybean)

OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (4  
CITINGS)

DATE LAST CITED: Date last citing reference entered STN: 16 Feb 2009

OS.CITING.REFS: CAPLUS 2001:376639; 1998:785095; 1998:457015; 1998:433815

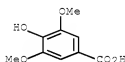
REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS  
RECORD.

REFERENCE(S):

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- (9) Heintz, C; Vitis 1990, P229
- (10) Huettel, R; Biological control of plant  
diseases:Progress and challenges for the future  
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- (11) Huettel, R; Plant nematology laboratory manual 1985,  
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- (13) Hussey, N; The role of biological control in pest  
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- (16) Meyer, S; Journal of Nematology 1990, V22, P532 MEDLINE
- (17) Meyer, S; Journal of Nematology 1995, V27, P409 MEDLINE
- (18) Meyer, S; Journal of the Helminthological Society of  
Washington 1992, V59, P237
- (19) Meyer, S; Nematologica, in press 1996, V41
- (20) Meyer, S; Pest management:Biologically based  
technologies 1993, P214

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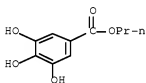
IT 530-57-4, Syringic acid  
 RL: AGR (Agricultural use); BIOL (Biological study); USES  
 (Uses)  
 (use of a sex pheromone, pheromone analogs, and Verticillium lecanii for management of Heterodera glycines on soybean)  
 RN 530-57-4 ZCAPLUS  
 CN Benzoic acid, 4-hydroxy-3,5-dimethoxy- (CA INDEX NAME)



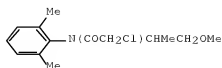
L92 ANSWER 24 OF 27 ZCAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 1983:571245 ZCAPLUS Full-text  
 DOCUMENT NUMBER: 99:171245  
 ORIGINAL REFERENCE NO.: 99:26211a,26214a  
 ENTRY DATE: Entered STN: 12 May 1984  
 TITLE: Interactions of the herbicides EPTC and EPTC + R-25788 with ozone and antioxidants in corn  
 Hatzios, Kriton K.  
 AUTHOR(S):  
 CORPORATE SOURCE: Dep. Plant Pathol. Physiol., Virginia Polytechnic Inst. and State Univ., Blacksburg, VA, 24061, USA  
 SOURCE: Journal of Agricultural and Food Chemistry (1983), 31(6), 1187-91  
 CODEN: JAFCAU; ISSN: 0021-8561  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 CLASSIFICATION: 5-3 (Agrochemical Bioregulators)  
 ABSTRACT:  
 In greenhouse studies, the potential interactions of the herbicide EPTC (S-Et dipropylthiocarbamate) [759-94-4] with ozone [10028-15-6] or the antioxidants piperonyl butoxide [51-03-6] and propyl gallate [121-79-9] on corn (Zea mays Pioneer 3780) were investigated in the presence or absence of the herbicide antidote R25788 (N,N-diallyl-2,2-dichloroacetamide) [37764-25-3]. Com. formulations of EPTC (EPTAM) or EPTC plus R-25788 (ERADICANE) were incorporated into the soil at 4.5, 5.6, and 6.7 kg/ha, and they were evaluated against 0.2 and 0.3 ppm of O3 or against 4.5, 6.7, and 9.0 kg/ha of soil applications of the 2 antioxidants. The interactive effects between selected treatment combinations of EPTC plus R25788 and O3 or the 2 antioxidants were highly synergistic. In the absence of R25788, the interactive effects of EPTC with O3 or the 2 antioxidants were additive, although EPTC at 6.7 kg/ha combined with some rates of piperonyl butoxide interacted synergistically. The implications of these findings as to the potential mode of action of the antidote R-25788 are discussed.  
 SUPPL. TERM: EPTC herbicide antidote ozone antioxidant  
 INDEX TERM: 37764-25-3  
 ROLE: BIOL (Biological study)  
 (EPTC interaction with ozone or antioxidants in corn)

10/810211

response to)  
INDEX TERM: 548-37-8  
ROLE: BIOL (Biological study)  
(EPTC interaction with ozone or antioxidants in,  
herbicide antidote effect on)  
INDEX TERM: 51-03-6 121-79-9 10028-15-6, biological  
studies  
ROLE: BIOL (Biological study)  
(EPTC interaction with, in corn, herbicide  
antidote effect on)  
INDEX TERM: 759-94-4  
ROLE: BIOL (Biological study)  
(ozone and antioxidants interaction with, in corn,  
herbicide antidote effect on)  
OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2  
CITINGS)  
DATE LAST CITED: Date last citing reference entered STN: 16 Feb 2009  
OS.CITING.REFS: CAPLUS 2002:241741; 1997:376246  
IT 121-79-9  
RL: BIOL (Biological study)  
(EPTC interaction with, in corn, herbicide antidote effect  
on)  
RN 121-79-9 ZCAPLUS  
CN Benzoic acid, 3,4,5-trihydroxy-, propyl ester (CA INDEX NAME)



L92 ANSWER 25 OF 27 ZCAPLUS COPYRIGHT 2009 ACS on STN  
ACCESSION NUMBER: 1983:174745 ZCAPLUS Full-text  
DOCUMENT NUMBER: 98:174745  
ORIGINAL REFERENCE NO.: 98:26481a,26484a  
ENTRY DATE: Entered STN: 12 May 1984  
TITLE: Effects of CGA-43089 on responses of sorghum (Sorghum  
bicolor) to metolachlor combined with ozone or  
antioxidants  
AUTHOR(S): Hatzios, Kriton K.  
CORPORATE SOURCE: Dep. Plant Pathol., Virginia Polytech. Inst. and State  
Univ., Blacksburg, VA, 24061, USA  
SOURCE: Weed Science (1983), 31(2), 280-4  
CODEN: WEESA6; ISSN: 0043-1745  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
CLASSIFICATION: 5-3 (Agrochemical Bioregulators)  
GRAPHIC IMAGE:



## ABSTRACT:

In greenhouse studies, the potential interactive effects of metolachlor (I) [51218-45-2] treatments combined with the air pollutant O<sub>3</sub> or the antioxidants piperonyl butoxide [51-03-6] and propyl gallate [121-79-9], on the growth of sorghum (*S. bicolor*, Funk G522DR) seedlings that were protected or unprotected with the antidote CGA-43089 (II) [63278-33-1] were examined. I was applied preplant incorporated at rates of 2.2, 3.9, and 5.6 kg/ha, and it was evaluated against fumigation with O<sub>3</sub> at 0.2 and 0.3 ppm (volume) or against 4.9, 6.7, and 9.0 kg/ha of each antioxidant applied preplant incorporated. In combination treatments, shoot dry weight at 30 days after planting was reduced more than expected by I in the presence of the protectant II and O<sub>3</sub> or some rates of the 2 antioxidants, suggesting synergism. In the absence of II, growth responses of sorghum to combination treatments of I with O<sub>3</sub> or Pr gallate suggested an additive effect, although some treatments of I combined with piperonyl butoxide interacted synergistically.

SUPPL. TERM: sorghum CGA43089 metolachlor ozone antioxidant; piperonyl butoxide metolachlor sorghum CGA43089; propyl gallate metolachlor sorghum CGA43089

INDEX TERM: Sorghum  
(metolachlor combined with antioxidants or ozone effect on, CGA43089 interaction in)

INDEX TERM: 51218-45-2  
ROLE: BIOL (Biological study)  
(sorghum response to antioxidants or ozone and, CGA43089 effect on)

INDEX TERM: 51-03-6 121-79-9 10028-15-6, biological studies  
ROLE: BIOL (Biological study)  
(sorghum response to metolachlor and, CGA43089 effect on)

INDEX TERM: 63278-33-1  
ROLE: BIOL (Biological study)  
(sorghum response to metolachlor combined with antioxidants or ozone interaction with)

OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

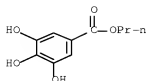
DATE LAST CITED: Date last citing reference entered STN: 16 Feb 2009

OS.CITING.REFS: CAPLUS 2002:241741; 1999:765978; 1997:376246

IT 121-79-9  
RL: BIOL (Biological study)  
(sorghum response to metolachlor and, CGA43089 effect on)

RN 121-79-9 ZCAPLUS

CN Benzoic acid, 3,4,5-trihydroxy-, propyl ester (CA INDEX NAME)



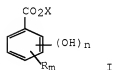
L92 ANSWER 26 OF 27 ZCAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 1983:121373 ZCAPLUS Full-text  
 DOCUMENT NUMBER: 98:121373  
 ORIGINAL REFERENCE NO.: 98:18425a,18428a  
 ENTRY DATE: Entered STN: 12 May 1984  
 TITLE: Plant growth regulators containing benzoates  
 PATENT ASSIGNEE(S): Chugai Pharmaceutical Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 INT. PATENT CLASSIF.: A01N037-10  
 CLASSIFICATION: 5-3 (Agrochemical Bioregulators)  
 Section cross-reference(s): 11  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 57212105	A	19821227	JP 1981-95938	19810623 <--
			JP 1981-95938	19810623 <--

PRIORITY APPLN. INFO.:  
 PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 57212105	IC	A01N037-10
	IPCI	A01N0037-10
	IPCR	A01N0037-36 [I,C*]; A01N0037-40 [I,A]; A01N0037-10 [I,C*]; A01N0037-10 [I,A]

GRAPHIC IMAGE:

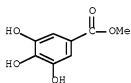


# ABSTRACT:

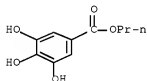
Plant growth regulators contain I (X = H, metal, or alkyl; R = H, alkyl, or alkoxy; n = 1-3; m = 1-4), except 3,4,5-trihydroxybenzoic acid. Thus, an emulsion contains o-hydroxybenzoic acid [69-72-7] 40, clay 40, and talc 50 parts. The potentiation of cucumber growth was demonstrated by 20 ppm o-hydroxybenzoic acid.

10/810211

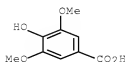
SUPPL. TERM: plant growth regulator benzoate  
INDEX TERM: Plant hormones and regulators  
ROLE: BIOL (Biological study)  
(hydroxybenzoates)  
INDEX TERM: 69-72-7, biological studies 69-72-7D, derivs. 89-86-1  
99-06-9, biological studies 99-10-5 99-24-1  
99-50-3 99-96-7, biological studies 118-61-6 119-36-8  
121-79-9 303-07-1 303-38-8 490-79-9 499-76-3  
530-57-4 578-36-9 2150-46-1 33580-60-8  
ROLE: AGR (Agricultural use); BAC (Biological  
activity or effector, except adverse); BSU (Biological  
study, unclassified); BIOL (Biological study); USES (Uses)  
(plant growth regulator)  
OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2  
CITINGS)  
DATE LAST CITED: Date last citing reference entered STN: 16 Feb 2009  
OS.CITING.REFS: CAPLUS 2001:283721; 1999:40117  
IT 99-24-1 121-79-9 530-57-4  
RL: AGR (Agricultural use); BAC (Biological activity or  
effector, except adverse); BSU (Biological study, unclassified); BIOL  
(Biological study); USES (Uses)  
(plant growth regulator)  
RN 99-24-1 ZCAPLUS  
CN Benzoic acid, 3,4,5-trihydroxy-, methyl ester (CA INDEX NAME)



RN 121-79-9 ZCAPLUS  
CN Benzoic acid, 3,4,5-trihydroxy-, propyl ester (CA INDEX NAME)



RN 530-57-4 ZCAPLUS  
CN Benzoic acid, 4-hydroxy-3,5-dimethoxy- (CA INDEX NAME)



L92 ANSWER 27 OF 27 ZCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1947:19501 ZCAPLUS Full-text  
 DOCUMENT NUMBER: 41:19501  
 ORIGINAL REFERENCE NO.: 41:3902d-i, 3903a-i, 3904a-i, 3905a-i, 3906a-i, 3907a-i, 3908a-i, 3909a-i, 3910a-i, 3911a-i, 3912a-h

ENTRY DATE: Entered STN: 22 Apr 2001

TITLE: New growth-regulating compounds. I. Summary of growth-inhibitory activities of some organic compounds as determined by three tests

AUTHOR(S): Thompson, H. E.; Swanson, Carl P.; Norman, A. G.

CORPORATE SOURCE: Camp Detrick, Frederick, MD

SOURCE: Botanical Gazette (Chicago) (1946), 107, 476-507

CODEN: BOGAA5; ISSN: 0006-8071

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

CLASSIFICATION: 15A (Economic Poisons)

## ABSTRACT:

cf. Newman, et al. C.A. 41, 3774i. Growth-regulating substances were prepared and subjected to 3 tests. In each a common reference material, (2,4-dichlorophenoxy)acetic acid (I), was employed and the results of any test were expressed as a percentage of the inhibition produced concurrently by I. The primary test, Test A (Corn Germination Test), involved the determination of inhibition of elongation of the primary root of germinating corn. Corn grains were germinated at 27° in Petri dishes containing 20 mL of an aqueous solution of the compound to be tested at a concentration of 10 p.p.m. After 4 days of growth the length of the primary root of each plant was measured. Inhibition of growth was determined by subtracting the average length of the primary roots of the treated seeds from that of the control seeds, expressed in percentage. In Test B (Kidney-Bean Single-Droplet Water Test) kidney beans were placed in pots containing 1 lb. soil. After 7-10 days each plant was treated with 0.02 mL of an aqueous solution containing 200 p.p.m. (4 γ) of the compound to be tested and 0.5% of Carbowax 1500. Treatment was applied to the upper surface of one of the primary leaves at a point along the midrib approx. one-eighth in. from the point of attachment of the blade and petiole. On the 10th day after treatment the fresh weight of that portion of each plant above the second node was determined. Controls untreated and also treated with I were included in each test. Test C (Kidney-Bean Single-Droplet Oil Test) was essentially the same as Test B but 0.01 mL of solution was applied containing 5γ in oil of the compound to be tested. Tri-Bu phosphate, at a concentration of 0.2%, was used as a co-solvent for comds. not directly soluble or miscible with oil. The introduction of I could be accomplished only in this way. Close numerical agreement was not necessarily expected between the 3 tests. The degree of inhibition produced by I in Tests B and C at different times of the year was not wholly identical and was affected by rate of growth. Test A was the most reproducible and formed the primary basis for detection of inhibitory activity and was reliable in separating those comds. that possess a high inhibitory activity for most broad-leaved plants from those with little or no activity at the same concentration.

Satisfactory agreement was found between Tests A and B with discrepancies in the direction of a lower activity by Test B. Variation between replications was greatest in Test C but the results were satisfactory in separating active inhibitors from those with low activity. Comps. showing high activity are promising for use as



herbicides. The compds. tested have been classified into groups according to activity and the results under 3 tests reported. The following, as Group I, are compds. possessing 80% or more of the activity of I in Test A:

(2-bromo-4-chlorophenoxy)acetic acid; Bu (2,4,5-trichlorophenoxy) acetate; (2-chloro-4-bromophenoxy)acetic acid; NH<sub>4</sub> 4-chlorocinnamate; α-(4-chlorophenoxy)acetamide; (3-chlorophenoxy)acetic acid; 4-isomer;

α-(2,4-dichlorophenoxy)acetamide;

2-(2,4-dichlorophenoxyacetamido)-1-butanol; Na

4-(2,4-dichlorophenoxyacetamido)-2,5-dichlorobenzenesulfonate;

2-(2,4-dichlorophenoxyacetamido)-2-ethyl-1,3-propanediol;

2-(2,4-dichlorophenoxyacetamido)-2-(hydroxymethyl)-1,3-propanediol;

2-(2,4-dichlorophenoxyacetamido)-2-methyl-1,3-propanediol;

2-(2,4-dichlorophenoxyacetamido)-1-naphthalenesulfonic acid;

8-(2,4-dichlorophenoxyacetamido)-1-naphthalenesulfonic acid;

8-(2,4-dichlorophenoxyacetamido)-1-naphthol-3,6-disulfonic acid;

(3,4-dichlorophenoxy)acetic acid; 2,5-isomer; (2,4-dichlorophenoxy)acetic anhydride; α-(2,4-dichlorophenoxy)-4-sulfoacetanilide;

(2,4-dichlorophenoxy)acetohydroxamic acid; (2,4-dichlorophenoxy) acetyl chloride; (2,4-dichlorophenoxyacetyl)guanidine;

N-(2,4-dichlorophenoxyacetyl)urea; α-(2,4-dichlorophenoxy)butyric acid;

2-diethylaminoethyl (2,4-dichlorophenoxy)acetate; 2-diethylaminoethyl (2,4,5-trichlorophenoxy)acetate; 2,2-dimethyl-1,3-dioxolan-4-ylmethyl (2-methyl-4-chlorophenoxy)acetate; 1,4-bis(2,4,5-trichlorophenoxyacetamido)benzene; 1,3-isomer; Et

(2,4-dichlorophenoxy)-acetate; Et (2-methyl-4-chlorophenoxy) acetate; Et

2-(2-methyl-4-chlorophenoxy) heptanoate; 2-hydroxyethyl

(2-methyl-4-chlorophenoxy)acetate; (2-iodo-4-chlorophenoxy)acetic acid;

(2-methyl-4-bromophenoxy)acetic acid; (2-methyl-4-chlorophenoxy)acetamide;

N-methyl-α-(4-chlorophenoxy)acetamide;

4-(2-methyl-4-chlorophenoxyacetamido)benzenesulfonic acid;

2-(2-methyl-4-chlorophenoxyacetamido)-6,8-naphthalenedisulfonic acid;

2-(2-methyl-4-chlorophenoxyacetamido)-1-naphthalenesulfonic acid;

8-(2-methyl-4-chlorophenoxyacetamido)-1-naphthalenesulfonic acid;

7-(2-methyl-4-chlorophenoxyacetamido)-1-naphthol-3,6-disulfonic acid;

(2-methyl-4-chlorophenoxy)acetic acid; (2-methyl-6-chlorophenoxy)acetic acid;

(2-methyl-4-chlorophenoxy)acetic anhydride; (2-methyl-4-chlorophenoxy)acetyl chloride; (2-methyl-4-fluorophenoxy)acetic acid;

N-methyl-α-(2,4,5-trichlorophenoxy)acetamide; 2-nitro-2-methylpropyl

(2-methyl-4-chlorophenoxy)acetate; 2-nitro-2-methylpropyl

(2-methyl-4-chlorophenoxy)acetate; Ph chloroacetate; Ph

(2-methyl-4-chlorophenoxy)acetate; iso-Pr (2-methyl-4-chlorophenoxy)acetate;

2-(2,4,5-trichlorophenoxyacetamido)-2-(hydroxymethyl)-1,3-propanediol;

α-(2,4,5-trichlorophenoxy)-N,N-bis(2-hydroxyethyl)acetamide;

(2,4,5-trichlorophenoxy)acetic piperidine;

α-(2,4,5-trichlorophenoxy)-3-chloroacetanilide;

α-(2,4,5-trichlorophenoxy)-2,4-dimethylacetanilide;

α-(2,4,5-trichlorophenoxy)-4-ethoxyacetanilide;

α-(2,4,5-trichlorophenoxy)-4-methylacetanilide;

α-(2,4,5-trichlorophenoxy)-2,4,6-trichloroacetanilide;

[3-(trifluoromethyl)phenoxy] acetic acid;

N-[tris(hydroxymethyl)methyl]-N-(2-hydroxy-3-[tris(hydroxymethyl)methylamino]-propyl)-α-(2,4-dichlorophenoxy)acetamide-HCl. The following, as Group II, are compds. possessing 50-79% of the activity of I in Test A:

2-aminoethanol bis-[(4-chlorophenoxy)acetate]; (4-bromophenoxy)acetic acid;

O-(2-carboxymethoxy-3-methyl-5-bromobenzoyl)glycolic acid;

O-(2-carboxymethoxy-3-methyl-5-nitrobenzoyl)-glycolic acid; decyl dihydrogen orthophosphate; (2-chloro-4-tert-butylphenoxy)acetic acid;

(2-chloro-4-iodophenoxy)acetic acid; 1-chloronaphthylacetic acid (mixture),

ammonium salt; 2-(4-chlorophenoxyacetamido)-1-naphthalenesulfonic acid;  
 4-(4-chlorophenoxyacetamido)-1-naphthalenesulfonic acid;  
 8-(4-chlorophenoxyacetamido)-1-naphthalenesulfonic acid;  
 8-(4-chlorophenoxyacetamido)-1-naphthol-3,6-disulfonic acid;  
 α-(4-chlorophenoxy)-N,N-bis(2-hydroxyethyl)acetamide;  
 (4-chlorophenoxy)acetyl chloride; 2-(4-chlorophenoxyacetamido)-2-(  
 hydroxymethyl)-1,3-propanediol; γ-(4-chlorophenoxy)-butyric acid;  
 S-(4-chlorophenyl)thioglycolic acid; 2-butenyl (4-chlorophenoxy)acetate;  
 (2,4-dibromophenoxy)acetic acid; α,β-dibromo-γ-phenylpropionyl  
 chloride; 3,5-dichloro-2-bromobenzoic acid; (2,4-dichloro-5-bromophenoxy)acetic  
 acid; (2,4-dichlorophenoxy)acetic piperidine;  
 4-(2,4-dichlorophenoxyacetamido)-1-naphthalenesulfonic acid;  
 (2,4-dichlorophenoxy)acetonitrile; N'-(2,4-dichlorophenoxyacetyl)betaine  
 hydrazide hydrochloride; α-(2,4-dichlorophenoxy)-N,N-diethylacetamide;  
 α-(2,4-dichlorophenoxy)-N-methylacetamide; NH<sub>4</sub>  
 γ-(2,4-dichlorophenoxy)butyrate; 2,4-dichlorophenylglycine;  
 S-(2,5-dichlorophenyl)thioglycolyl chloride;  
 2,2-dimethyl-1,3-dioxolan-4-ylmethyl (4-chlorophenoxy)-acetate;  
 β-(2,4-dimethylphenoxy)propionic acid; 3,5-dimethylpyrazole; Et  
 3-hydroxy-2-naphthoate; Et (2-methyl-4,6-dichlorophenoxy) acetate;  
 2-hydroxy-3-methyl-5-bromobenzoic acid; 2-hydroxy-3-methyl-5-iodobenzoic acid;  
 2-hydroxyethyl (4-chlorophenoxy)-acetate;  
 N-2-hydroxyethyl-α-(2,4-dichlorophenoxy)acetamide;  
 N-2-hydroxyethyl-α-(2-methyl-4-chlorophenoxy)-acetamide; 2-hydroxyethyl  
 (2-methyl-4-chlorophenoxy)-acetate; 2-hydroxy-3-methylbenzoic acid;  
 2-hydroxy-5-nitrobenzoic acid; (2-methyl-4-bromo-6-carboxyphenoxy)acetic acid;  
 α-(3-methyl-4-chlorophenoxy)acetamide; Me (4-chlorophenoxy)acetate;  
 (2-methyl-5-chlorophenoxy)acetic acid; (3-methyl-4-chlorophenoxy)-acetic acid;  
 α-(2-methyl-4-chlorophenoxy)-N,N-bis(2-hydroxyethyl)acetamide;  
 (3-methyl-4-chlorophenoxy)-acetyl chloride; Me (2,4-dibromophenoxy)acetate; Me  
 (2,4-dimethylphenoxy) acetate; (2-methylphenoxy)acetyl chloride; Ph  
 (4-chlorophenoxy)acetate; Ph (2,4-dichlorophenoxy)acetate;  
 α-(2-propyl-4-chlorophenoxy)acetamide; α-(2,4,5-trichlorophenoxy)  
 acetanilide; (2,4,5-trichlorophenoxy)acetonitrile;  
 N-(2,4,5-trichlorophenoxyacetyl) bis[tris(hydroxymethyl) methylaminomethyl]  
 carbinol hydrochloride. The following, as Group III, are compds. possessing  
 30-49% of the activity of I in Test A: 4-aminoazobenzene; 2-(amylamino)ethyl  
 diphenylacetate-HCl; (2-amyl-4-chlorophenoxy)acetic acid; isoamyl  
 (2,4-dimethylphenoxy)acetate; 2-bromoethyl (4-chlorophenoxy)acetate;  
 (2-bromophenyl)sulfamic acid; butylamine mercuric chloride; Bu  
 (3-methylphenoxy)acetate; cacoetheline; 1-(4-carboxyphenyl)-3-(3-  
 chlorophenyl)urea; chloroacetamide; 4-chlorobenzoyl chloride;  
 (4-chlorophenoxy)acetonitrile; 1-(4-chlorophenoxy)-2,3-epoxypropane;  
 (4-chlorophenyl)acetic acid; N-(4-chlorophenyl)glycine;  
 S-(4-chlorophenyl)thioglycolyl chloride;  
 N-butyl-S-(4-chlorophenyl)thioglycolamide; [2-(cyanomethyl)-4-chlorophenoxy]  
 acetic acid; NH<sub>4</sub> N,N-(cyclopentamethylene)dithiocarbamate;  
 3,5-dibromo-2-aminobenzoic acid; 2,5-dichloroaniline mercuric chloride salt;  
 (2,4-dichloro-5-aminophenoxy)-acetic acid; 2,4-dichlorocinnamic acid;  
 α-(2,4-dichloro-6-methylphenoxy) acetamide;  
 (2,4-dichloro-5-nitrophenoxy)acetic acid;  
 (2,4-dichlorophenoxy)-N,N-bis(2-hydroxyethyl)acetamide;  
 S-(2,5-dichlorophenyl)thioglycolic acid;  
 1,1-bis(1-hydroxy-2,2,2-trichloroethyl)urea; 3,4-dimethylphenol;  
 (2,4-dimethylphenoxy)acetic acid; 3,4-isomer; (2,4-dimethylphenoxy)acetyl  
 chloride; S-(2,4-dinitrophenyl)thioglycolic acid; N,N-bis  
 [tris(hydroxymethyl)methyl]ethylenediamine-di-HCl; Et  
 [2-(chloromethyl)-4-chlorophenoxy]acetate; (2-ethyl-4-chlorophenoxy)acetic

acid; Et S-(4-chlorophenyl)thioglycolate; 2-hydroxy-3-carboxy-5-chlorotoluene; 4-hydroxy-3,5-dibromobenzoic acid; 2-hydroxyethyl 2,4-dichlorophenyl ether; N4-(iodoacetyl)sulfanilamide; 2-methyl-2-butylaminopropyl 4-(hexyloxy)benzoate-HCl; (2-methyl-4-chloro-6-carboxyphenoxy)acetic acid; Me(2-chlorophenoxy)acetate; 1-(2-methyl-4-chlorophenoxy)-2,3-epoxypropane; Me(2,4-dichlorophenoxy)acetate; (2-methylphenoxy)acetic acid; 4-nitrobenzoyl chloride; octyl dihydrogen orthophosphate; 2-isopropylaminoethyl 2-butoxybenzoate-HCl; Pr(2-methyl-4-chlorophenoxy)acetate; iso-Pr phenylcarbamate; Ba 3-pyridinesulfonate; sulfamerazine; 2,3,5-tribromobenzoic acid; 2,3,5-trichlorobenzoic acid; (2,2,2-trichloro-1-hydroxyethyl)urea; (2,4,6-trichlorophenoxy)acetic acid; (2,4,5-trichlorophenoxy)-2-nitroacetanilide; 2,4,6-trichlorophenyl phenylcarbamate; S-(2,4,5-trichlorophenyl)thioglycolamide; 1-[3-(trifluoromethyl)phenoxy]-2,3-epoxypropane; NH<sub>4</sub> 2,3,5-triiodobenzoate; N-[tris(hydroxymethyl)methyl]-N-(2-hydroxy-3-[tris(hydroxymethyl)methylaminopropyl]- $\alpha$ -(4-chlorophenoxy)acetamide-HCl.

The following, as Group IV-A, are comds. showing less than 29% of the activity of I in Test A and 50% or more of the activity of I in either Test B or Test C:  $\alpha$ -amino- $\beta$ -(2,4-dichlorophenoxy)propionamide;  $\alpha$ -amino- $\beta$ -(3-nitro-4-hydroxyphenyl)propionic acid nitrate salt; aminotetrazole; aniline; (benzylsulfonyl)acetic acid; 5-bromo-2-nitrobenzoic acid; 2-bromo-3-nitrobenzoic acid; NH<sub>4</sub> 2-bromo-3-nitrobenzoate;  $\beta$ -bromopropionic acid; 2-butylaminoethyl 4-butoxybenzoate-HCl; 2-isobutylaminoethyl 4-butoxybenzoate-HCl; 2-butylaminoethyl 4-ethoxybenzoate-HCl; 2-butylaminoethyl 4-methoxybenzoate-HCl; camphor oxime; N4-(carbo-2-chloroethoxy)sulfanilamide; (2-carbomethoxy-4-chlorophenoxy)acetic acid; (2-carboxy-4-chlorophenoxy)acetic acid; (2-carboxy-6-methylphenoxy)acetic acid; (2-carboxyphenoxy)acetic acid; [2-(2-carboxymethoxy)-3,5-dichlorobenzoyl]glycolic acid; chloroacetic acid; 2-chloroaniline; 3-chloroaniline; 4-chloroaniline; 4-chlorobenzyl mercaptan; 4-chlorobenzenesulfonyl chloride; 4-chlorobenzylisothiourea-HCl; 4-chloromandelic acid; (2-chloro-4-methylphenoxy)acetic acid; 2-chloro-3-nitrobenzoic acid; 2-chloro-5-nitrobenzoic acid; (2-chlorophenoxy)acetic acid; [2-(2-chlorophenyl)phenoxy]acetic acid; 4-chlorothiophenol; diazoaminobenzene; 2,4-dibromophenol; dichloroacetic acid; 2,4-dichloroaniline; 2,5-dichloroaniline; (2,4-dichlorobenzylsulfonyl)acetic acid; 2,4-dichlorobenzoic acid; 2,4-dichlorobenzylisothiourea-HCl; (2,4-dichloro-6-carboxyphenoxy)acetic acid; (2,6-dichloro-4-nitrophenoxy)acetic acid; 2,4-dichlorophenyl phenylcarbamate; (2,5-dichlorophenyl)sulfamic acid; 2,4-dihydroxypyrimidine; 2,4-dimethylphenol; (2,4-dinitrophenyl)acetic acid; N,N'-bis[tris(hydroxymethyl)methyl] hexamethylenediamine-di-HCl; 3-ethoxy-2-naphthoic acid; 2-ethylaminobutyl 4-ethoxybenzoate-HCl; Et carbamate; Et  $\beta$ -methyl- $\beta$ -(4-chlorophenyl)glycidate; 3-ethyl-4-methylpyridine; Et(2-propyl-4-chlorophenoxy)acetate; (2-fluorophenoxy)acetic acid; 2-hydroxy-3-bromo-5-chlorobenzoic acid; 2-hydroxy-3-methyl-5-nitrobenzoic acid; N-(2-hydroxy-3-chloropropyl)-p-toluidine; 2-hydroxy-3,5-dinitrobenzoic acid; 4-iodobenzoic acid; 2-methoxyphenol; 4-methoxyphenol; 2-methyl-2-aminolaminopropyl diphenylacetate-HCl; 2-methyl-5-chlorophenol; 2-methyl-6-chlorophenol; (2-methyl-4-chlorophenoxy)fumaric acid; Me 3-chlorophenylcarbamate; 2-methyl-4,6-dichlorophenol; 2-methyl-2-hexylaminopropyl 4-ethoxybenzoate-HCl; Me(2-methyl-6-chlorophenoxy)acetate; (4-methylphenoxy)acetic acid; Me phenylthiocarbamate; S-(2-methylphenyl)thioglycolic acid; 4-methyl-4-(trichloromethyl)-2,5-cyclohexadien-1-one O-carboxymethyl oxime; 2-nitrobutyl phenylcarbamate; 1-phenyl-3-methyl-5-pyrazole; phthalic acid;  $\alpha$ -pinene; 2-isopropylaminoethyl 4-butoxybenzoate-HCl; (2-propyl-4-chlorophenoxy)acetic acid; iso-Pr(2,4-dimethylphenoxy)acetate; iso-Pr(2-methyl-6-chlorophenoxy)acetate; 3-propyl-2-naphthoic acid; iso-Pr

(2-propyl-4-chlorophenoxyacetate); trichloroacetamide; trichloroacetic acid; trichloroacetyl chloride; 2,4,5-trichlorobenzenesulfonamide; 3,4,5-trihydroxybenzoic acid; N-[tris(hydroxymethyl)methyl]-2,3-dibromopyrrolamine-HBr; salicylic acid. The following, as Group IV-B, are compds. insufficiently soluble in water for Test A to be performed but exhibiting 50% or more of the activity of I in either Test B or Test C: allyl (4-chlorophenoxy)acetate; allyl (2,4-dichlorophenoxy)acetate; 2-aminonaphthoic acid; amyl (2,4-dichlorophenoxy)acetate; isoamyl (2,4-dichlorophenoxy)acetate; amyl 1-naphthalenecarbamate; bis-(4-chlorophenyl) (trichloromethyl)methane; 1,1'-(bis-2-naphthyl)phenylmethane; 2-bromo-3,5-dichlorobenzamide; 2-bromo-3,5-dichlorobenzanilide; 2,2'-dibromo-3,5-dichlorobenzanilide; 2,3'-dibromo-3,5-dichlorobenzanilide; 2,4'-dibromo-3,5-dichlorobenzanilide; 2-bromo-3,3',5-trichlorobenzanilide; 2-bromo-2',3,4',5-tetrachlorobenzanilide; 2-bromo-3,5-dichloro-m-benzotoluidide; 2-bromo-3,5-dichlorobenzoyl chloride; 2-bromoethyl (2,4-dibromophenoxy) acetate; 2-bromoethyl (2,4-dichlorophenoxy) acetate;  $\alpha$ -(4-bromophenoxy)acetamide; 1-(3-bromophenyl)-3-(2-chlorophenyl)urea; 1-(3-bromophenyl)-3-(3-chlorophenyl)urea; Bu (2,4-dichlorophenoxy)acetate; iso-Bu (2,4-dichlorophenoxy)acetate; 1-carbethoxy-3-(3-chlorophenyl)urea; 2-chloroethyl (4-chlorophenoxy)acetate; 2-chloroethyl (2,4-dibromophenoxy)acetate; 2-chloroethyl (2,4-dichlorophenoxy)acetate; 2-chloroethyl (2-methyl-4-chlorophenoxy)acetate; 2-chloroethyl 1-naphthalenecarbamate; 2-chloroethyl phenylcarbamate;  $\alpha$ -(4-chlorophenoxy)-p-acetanilide;  $\alpha$ -(4-chlorophenoxy)-2-bromoacetanilide;  $\alpha$ -(4-chlorophenoxy)-3-bromoacetanilide;  $\alpha$ -(4-chlorophenoxy)-4-bromoacetanilide;  $\alpha$ -(4-chlorophenoxy)-2-chloroacetanilide;  $\alpha$ -(4-chlorophenoxy)-3-chloroacetanilide;  $\alpha$ -(4-chlorophenoxy)-2,4-dimethylacetanilide;  $\alpha$ -(4-chlorophenoxy)-4-ethoxyacetanilide; 1-(4-chlorophenoxyacetyl)-2-phenylhydrazine;  $\alpha$ -(4-chlorophenoxy)-4-iodoacetanilide;  $\alpha$ -(4-chlorophenoxy)-3-nitroacetanilide;  $\alpha$ -(4-chlorophenoxy)-p-acetotoluidide;  $\alpha$ -(4-chlorophenoxy)-N-p-xenylacetamide;  $\gamma$ -(4-chlorophenoxy)butyronitrile; 4-chlorophenyl (4-chlorophenoxy)acetate; 1-(4-chlorophenyl)-3-(2-chlorophenyl) urea; 4-chlorophenyl (2,4-dichlorophenoxy)acetate; 1-(3-chlorophenyl)-3,3-(cyclopentamethylene)urea; 1-(3-chlorophenyl)-3-phenylurea; S-(4-chlorophenyl)-2-bromothioglycolanilide; S-(4-chlorophenyl)-3-bromothioglycolanilide; 4-chlorophenyl (2,4,5-trichlorophenoxy)acetate; 2,6-dibromobenzoquinone-4-chloroimide; 2,4-dichlorobenzoylsulfonyl chloride; 1,3-bis(4-chlorophenoxyacetamido)benzene; 1,4-isomer; 4,4'-bis(4-chlorophenoxyacetamido)biphenyl; 2,4-bis(4-chlorophenoxyacetamido)toluene;  $\alpha$ -(2,4-dichlorophenoxy)acetanilide;  $\alpha$ -(2,4-dichlorophenoxy)-N-(2-aminoethyl)acetamide;  $\alpha$ -(2,4-dichlorophenoxy)-p-acetanilide;  $\alpha$ -(2,4-dichlorophenoxy)-2,5-dichloroacetanilide;  $\alpha$ -(2,4-dichlorophenoxy)-2,4-dimethylacetanilide; 1-(2,4-dichlorophenoxyacetyl)-2-(2,4-dinitrophenyl)hydrazine; (2,4-dichlorophenoxy)acetic hydrazide;  $\alpha$ -(2,4-dichlorophenoxy)aceto-2-naphthalide;  $\alpha$ -(2,4-dichlorophenoxy)-p-acetotoluidide;  $\alpha$ -(2,4-dichlorophenoxy)-N-o-xenylacetamide; 4-(2,4-dichlorophenoxyacetamido)azobenzene; (2,4-dichlorophenoxy)acetylaminoguanidine; (2,4-dichlorophenoxy)acetyl bromide;

$\alpha$ -(2,4-dichlorophenoxy)-N-(hydroxy-tert-butyl)acetamide;  
 S-(2,4-dichlorophenoxyacetyl)isothiurea;  
 1-(2,4-dichlorophenoxyacetyl)-2-methyl-2-thioisourea;  
 $\gamma$ -(2,4-dichlorophenoxy)butyric acid;  
 $\gamma$ -(2,4-dichlorophenoxy)butyronitrile; 2,4-dichlorophenyl  
 (4-chlorophenoxy)acetate; 2,4-dichlorophenyl (2,4-dichlorophenoxy)acetate;  
 1-(2,5-dichlorophenyl)-3-phenylurea; S-(2,5-dichlorophenyl)thioglycolamide;  
 4,4'-bis(2,4-dichlorophenoxyacetamido)biphenyl; 1,4-bis  
 (2,4-dimethylphenoxyacetamido)benzene; 2,4-bis(2,4-  
 dimethylphenoxyacetamido)toluene; 2,4-dichlorophenyl  
 (2,4,5-trichlorophenoxy)acetate; 2,4-dichlorophenyl (4-chlorophenoxy)acetate;  
 2,3-dichloropropyl (2,4-dibromophenoxy)acetate; 2,3-dichloropropyl  
 (2,4-dichlorophenoxy)acetate; 2-diethylaminoethyl 2,3,5-triiodobenzoate;  
 3,3'-dimethyl-4,4'-bis(4-chlorophenoxyacetamido)biphenyl;  
 3,3'-dimethyl-4,4'-bis(2-methylphenoxyacetamido)biphenyl;  
 1,3-bis(2-methylphenoxyacetamido)benzene; 1,4-isomer;  
 4,4'-bis(2-methylphenoxyacetamido)biphenyl;  
 4,4'-bis(2,4-dimethylphenoxyacetamido)biphenyl;  
 1-(4-ethoxyphenyl)-3-phenylurea; Et 2-bromo-3,5-dichlorobenzoate; Et  
 (4-bromophenoxy)acetate; Et (4-chlorophenoxy)acetate; 2-ethylhexyl  
 (2,4-dichlorophenoxy)acetate; methallyl (4-chlorophenoxy)acetate;  
 2-methoxy-4-methylphenyl 1-naphthalenecarbamate; Me 2-bromo-3-nitrobenzoate;  
 4-(2-methyl-4-chlorophenoxyacetamido)azobenzene;  
 $\alpha$ -(2-methyl-6-chlorophenoxy)-2,5-dichloroacetanilide;  
 2-methyl-4-chlorophenyl (2,4-dichlorophenoxy)acetate;  
 1-methyl-2,4-bis(2,4-dichlorophenoxyacetamido)benzene; Me  
 4-nitrophenylcarbamate; Me (2,4,5-trichlorophenoxy)acetate;  
 (2-hydroxy-1-naphthyl)-1-piperidylphenylmethane; 2-nitrobutyl  
 (2,4,5-trichlorophenoxy)acetate; 4-nitro-N,N-dimethylaniline; octyl  
 (2,4-dichlorophenoxy)acetate; pentachlorophenyl  
 (2,4,5-trichlorophenoxy)acetate; 1-phenyl-1,3-cyclopentamethyleneurea; Ph  
 phenylcarbamate; Ph (2,4,5-trichlorophenoxy)acetate; iso-Pr  
 (2,4-dichlorophenoxy)acetate; 3-isopropoxy-2-naphthoic acid;  
 1,3-di-m-tolyl-urea; (2,4,5-tribromo-3,5-dimethylphenoxy)acetic acid;  
 2,4,6-tribromophenyl acetate; 2,4,5-trichlorobenzamide; trichloroethyl  
 (2,4-dibromophenoxy)acetate; 2,2,2-trichloroethyl (2,4-dichlorophenoxy)acetate;  
 2,4,5-trichlorophenoxyacetic acid; 2-(2,4,5-  
 trichlorophenoxyacetamido)anthraquinone;  
 $\alpha$ -(2,4,5-trichlorophenoxy)-4-bromoacetanilide;  
 $\alpha$ -(2,4,5-trichlorophenoxy)-4-methoxyacetanilide;  
 (2,4,5-trichlorophenoxy)aceto-2-naphthalide;  
 $\alpha$ -(2,4,6-trichlorophenoxy)-4-sulfoacetanaphthalide;  
 $\alpha$ -(2,4,5-trichlorophenoxy)-m-acetotoluidide;  
 (2,4,5-trichlorophenoxy)acetyl chloride;  
 1-(2,4,5-trichlorophenoxyacetyl)-2-(p-nitrophenyl)hydrazine;  
 2,4,6-trichlorophenyl (4-chlorophenoxy)acetate; 2,4,6-trichlorophenyl  
 (2,4-dichlorophenoxy)acetate; 2,4,6-trichlorophenyl  
 (2,4,5-trichlorophenoxy)acetate; N-[3-(trifluoromethyl)phenyl]- $\alpha$ -(4-  
 chlorophenoxy)acetamide; N-[3-(trifluoromethyl)phenyl]- $\alpha$ -(2,4,5-  
 trichlorophenoxy)acetamide; 2,3,5-triiodobenzoic acid; 2,3,5-triiodobenzoyl  
 chloride; 1-[tris(hydroxymethyl)methylamino]-2,4-dinitrobenzene;  
 N-(p-xenyl)- $\alpha$ -(2,4-dichlorophenoxy)acetamide.

The following, as Group IV-C, were also examined by the three tests and showed  
 relatively low activity as compared with I: 2-acetoxyethyl  
 1-naphthalenecarbamate; 2-acetoxyethyl phenylcarbamate;  
 (2-acetyl-4-chlorophenoxy)acetic acid; (2-allyl-4-chlorophenoxy)acetic acid;  
 allyl 1-naphthalenecarbamate; allyl phenylcarbamate; allyl 4-tolyl sulfone;  
 1-aminoanthraquinone; 2-isomer; 4-aminobenzyl

tris(hydroxymethyl)methylamine-di-HCl; 2-amino-3,5-dichlorobenzoic acid;  
 2-aminoethylsulfuric acid; 8-amino-1-naphthol-3,6-disulfonic acid;  
 1-amino-2-naphthol-4-sulfonic acid; 4-aminophenol; (2-aminophenoxy)acetic acid;  
 (4-aminophenyl)acetic acid; 2-aminopyridine; 2-aminothiazole; 2-amylaminoethyl  
 4-butoxybenzoate-HCl; isoamyl formate; amyl (2-methylphenoxy)acetate; isoamyl  
 1-naphthalenecarbamate; 4-tert-amylphenol; amyl phenylcarbamate; isoamyl  
 phenylcarbamate; (4-arsonophenoxy)acetic acid; benzoic acid;  
 4-benzylaminophenol-HCl; benzyl Bu sulfone; allyl (benzylsulfonyl)acetate; Me  
 (benzylsulfonyl)acetate; N-benzyl-N,N'-bis[tris(hydroxymethyl)methyl]-2-hydroxy-  
 1,3-diaminopropane; benzyl Et sulfone; benzyl Me sulfone; benzyl 4-tolyl  
 sulfone; benzyl[tris(hydroxymethyl)methyl]amine; 1,3-bis[  
 [tris(hydroxymethyl)methyl]amino]-2-propanol-HCl; 2-bromobenzamide;  
 2-bromobenzanilide; 2-bromo-2',4'-dichlorobenzanilide; 2-bromobenzoic acid;  
 3-isomer; NH<sub>4</sub> 4-bromobenzoate; 4-bromobenzonitrile;  
 (2-bromo-4-tert-butylphenoxy)acetic acid;  
 2-bromo-3,5-dichloro-N-butylbenzamide; 2-bromo-3,4',5-trichlorobenzanilide;  
 2-bromoethylamine; 2-bromoethyl 4-ethoxythiolbenzoate; 2-bromoethyl  
 (2-methyl-4-chlorophenoxy)acetate; 2-bromo-4-nitrobenzoic acid;  
 2-bromo-5-nitrobenzoic acid; NH<sub>4</sub> 2-bromo-5-nitrobenzoate;  
 3-bromo-4-nitrobenzoic acid; 3-bromo-5-nitrobenzoic acid; 4-bromophenol;  
 (2-bromophenoxy)acetic acid; α-(4-bromophenoxy)-4-bromoacetanilide;  
 α-(4-bromophenoxy)-4-chloroacetanilide;  
 α-(4-bromophenoxy)-2,5-dichloroacetanilide; 3-bromophenylammonium  
 fluoroborate; 4-bromophenylammonium fluoroborate;  
 1-(2-bromophenyl)-3-(2-chlorophenyl)urea;  
 1-(4-bromophenyl)-3-(3-chlorophenyl)urea;  
 1-(2-bromophenyl)-3-(3-chlorophenyl)urea;  
 N-(4-bromophenyl)-3-(2-chlorophenyl)urea; NH<sub>4</sub> (4-bromophenyl)dithiocarbamate;  
 4-bromophenyl 1-naphthalenecarbamate; (2-bromo-4-phenylphenoxy)acetic acid;  
 4-bromophenyl phenylcarbamate; 1-(2-bromophenyl)-3-phenylurea;  
 1-(3-bromophenyl)-3-phenylurea; 1-(4-bromophenyl)-3-phenylurea;  
 3-bromophenylsulfamic acid; N-(3-bromophenyl)  
 α,α,α-trichloroacetamide; 2-butylaminoethyl  
 2-butoxybenzoate-HCl; 2-butylaminoethyl diphenylacetate-HCl; 2-butylaminoethyl  
 4-(heptyloxy)benzoate-HCl; 2-butylaminoethyl 4-propoxybenzoate-HCl;  
 2-butylaminoethyl 2-(thiobutoxy)benzoate; (2-sec-butyl-4-chlorophenoxy)acetic  
 acid; Hg butyldithiocarbamate; Bu 1-naphthalenecarbamate; iso-Bu  
 1-naphthalenecarbamate; 4-tert-butylphenol; Bu phenylcarbamate; iso-Bu  
 phenylcarbamate; tert-Bu phenylcarbamate; 1-butyl-3-phenylthiourea;  
 N-butyl-α-(2,4,5-trichlorophenoxy)acetamide;  
 4-carbethoxy-6-methoxyquinoline; 1-carbethoxy-3-phenylurea; 1-carbobutoxyethyl  
 1-naphthalenecarbamate; 1-carboisopropoxyethyl 1-naphthalenecarbamate;  
 O-(2-carboxymethoxybenzoyl)glycolic acid;  
 O-(2-carboxymethoxy-3-methyl-5-chlorobenzoyl)glycolic acid; NH<sub>4</sub>  
 (carboxymethyl)dithiocarbamate; Na (4-carboxymethylphenyl)dithiocarbamate;  
 2-carboxy-6-methylphenyl phenylcarbamate; NH<sub>4</sub> (4-carboxyphenyl)dithiocarbamate;  
 4-carboxyphenylglycine; o-carboxyphenyl 1-naphthalenecarbamate;  
 1-(4-carboxyphenyl)-3-(1-naphthyl)urea; 4-carboxyphenyl phenylcarbamate;  
 S-(4-carboxyphenyl)thioglycolic acid; N<sub>4</sub>-(β-carboxypropionyl)sulfanilamide;  
 pyrocatechol; chloroacetyl chloride; 4-chloroanisole; 2-chlorobenzaldehyde  
 O-carboxymethylxime; 2-chlorobenzaldehyde oxime; 4-chlorobenzamide;  
 4-chlorobenzenesulfonamide; 4-chlorobenzoic acid; bis(4-chlorobenzyl)disulfide;  
 S-(4-chlorobenzyl)thioglycolic acid; bis(4-chlorobenzyl)sulfide;  
 (4-chlorobenzylsulfonyl)acetic acid; 4-chlorocinnamic acid; highly chlorinated  
 1,5-dihydroxynaphthalene; 2-chloroethyl (2-propyl-4-chlorophenoxy)acetate;  
 chlorohydroquinone; chlorohydroquinone-O,O-diacytic acid;  
 4-(chloromercuri)phenol; [4-(chloromercuri)phenoxy]acetic acid;  
 [2-(chloromethyl)-4-chlorophenoxy]acetic acid;  
 2-chloro-4-methyl-6-methoxyquinoline; 2-chloro-4-methylquinoline;

(7-chloro-1-naphthoxy)acetic acid; 1-chloronaphthylacetic acid mixture;  
 4-chlorophenetole; 1-(4-chlorophenoxyacetamido)naphthalene;  
 2-(4-chlorophenoxyacetamido)naphthalene;  
 $\alpha$ -(4-chlorophenoxy)-2,5-dichloroacetanilide;  
 $\alpha$ -(4-chlorophenoxy)-N,N-diethylacetamide; (4-chlorophenoxy)acetic  
 piperidine;  $\alpha$ -(4-chlorophenoxy)-2-nitroacetanilide;  
 $\alpha$ -(4-chlorophenoxy)-2,4,6-trichloroacetanilide;  
 (4-chlorophenoxy)(4-chlorophenyl)acetic acid; (4-chlorophenoxy)fumaric acid;  
 2-(4-chlorophenoxy)heptanoic acid;  $\beta$ -(4-chlorophenoxy)propionic acid;  
 $\beta$ -(4-chlorophenoxy)propionitrile; 4-chlorophenylammonium fluoroborate;  
 1-(2-chlorophenyl)-3-butylurea; 1-(3-chlorophenyl)-3-butylurea;  
 1-(2-chlorophenyl)-1-(4-carboxyphenyl)urea;  
 N-(3-chlorophenyl)- $\alpha$ -chloroacetamide; 4-isomer;  
 1-(3-chlorophenyl)-3-(2-chlorophenyl)urea;  
 1-(4-chlorophenyl)-3-(3-chlorophenyl)urea;  
 3-(2-chlorophenyl)-1,1-cyclopentamethyleneurea; NH<sub>4</sub>  
 (4-chlorophenyl)dithiocarbamate; 2-chloro-1,4-phenylene bis(phenylcarbamate);  
 N-(2-chlorophenyl)glycine; 1-(2-chlorophenyl)-3-(2-hydroxyethyl)urea; 3-chloro  
 isomer; 3-chlorophenyl isocyanate; 1-(2-chlorophenyl)-3-(1-naphthyl)urea;  
 4-isomer; [2-(4-chlorophenyl)phenoxy]acetic acid;  
 1-(2-chlorophenyl)-3-phenylurea; 4-chloro isomer;  
 1-(2-chlorophenyl)-3-phenylthiourea; 3-isomer; 4-isomer; Na  
 (3-chlorophenyl)sulfamate; (4-chlorophenyl)sulfamic acid;  
 S-(2-chlorophenyl)thioglycolic acid; S-(4-chlorophenyl)thioglycolamide;  
 S-(4-chlorophenyl)thioglycolanilide; S-(4-chlorophenyl)-4'-  
 bromothioglycolanilide; S-(4-chlorophenyl)thioglycol-p-phenetide;  
 S-(4-chlorophenyl)thioglycol-m-toluidine; 1-(2-chlorophenyl)urea; 3-isomer;  
 1,3-bis(2-chlorophenyl)urea; 3-isomer; cinnamic acid; cinnamoyl chloride;  
 o-cresol; m-isomer; p-isomer; 4-toloxycetyl chloride; cyanoacetamide;  
 2-cylohexyl-4-chlorophenoxy)acetic acid; (decyl-mercapto)acetic acid;  
 (decylsulfonol)acetic acid; bis(2-acetoxyethyl)sulfone; 2,6-diaminopyridine  
 monohydrochloride; 2,6-dibromo-4-carboxyphenyl phenylcarbamate;  
 $\alpha$ , $\beta$ -dibromodihydrocinnamic acid; 4,6-dibromo-1,3-dihydroxybenzene;  
 (2,6-dibromo-4-methylphenoxy)acetic acid; 2,4-dibromophenyl phenylcarbamate;  
 $\alpha$ ,  $\beta$ -dibromo- $\gamma$ -phenylpropionamide; bis(2-butyroxyethyl)  
 sulfone; 2,5-dichloro-4-aminobenzenesulfonic acid; 2,4-dichloroanisole;  
 2,6-dichlorobenzenoneindophenol sodium salt; 2,5-dichlorobenzenesulfonamide;  
 2,5-dichlorobenzenesulfonyl chloride; (2,4-dichlorobenzylmercapto)acetic acid;  
 bis(2,4-dichlorobenzyl)disulfide; 2,4-dichlorobenzyl mercaptan;  
 bis(2,4-dichlorobenzyl)sulfide; bis(2,4-dichlorobenzyl)sulfone;  
 5,7-dichloro-3-coumaranone; N,2,4-trichloroacetanilide;  
 2,6-dichloro-3-ethyl-4-methylpyridine; 2,4-dichloromandelic acid;  
 2,6-dichloro-4-methyl-5-ethylnicotinamide; (2,6-dichloro-4-methylphenoxy)acetic  
 acid; (2,4-dichloro-6-methylphenoxy)acetyl chloride;  
 (2,4-dichloro-1-naphthoxy)acetic acid; 2,4-dichlorophenetole;  
 2,4-dichlorophenol; 1-(2,4-dichlorophenoxyacetamido)anthraquinone;  
 2-(2,4-dichlorophenoxyacetamido)anthraquinone; (2,6-dichlorophenoxy)acetic  
 acid; 3,5-isomer;  $\alpha$ -(2,4-dichlorophenoxy)-4-bromoanilide;  
 $\alpha$ -(2,4-dichlorophenoxy)-4-chloroacetanilide;  
 $\alpha$ -(2,4-dichlorophenoxy)-p-acetophenetide;  
 $\alpha$ -(2,4-dichlorophenoxy)-N-(2-hydroxyethyl)acetamide;  
 2,4-dichlorophenoxyaceto-1-naphthalide;  
 $\alpha$ -(2,4-dichlorophenoxy)-2-nitroacetanilide;  
 $\alpha$ -(2,4-dichlorophenoxy)-3-nitroacetanilide;  
 1-(2,4-dichlorophenoxyacetyl)-2-(p-nitrophenyl)hydrazine;  
 $\alpha$ -(2,4-dichlorophenoxy)-N-2'-pyridylacetamide;  
 $\alpha$ -(2,4-dichlorophenoxy)-2,4,6-trichloroacetanilide;

2-(2,4-dichlorophenoxyacetamido)-6,8-naphthalenedisulfonic acid;  
 1-(2,4-dichlorophenoxyacetyl)-1-phenylsemicarbazide;  
 (2,4-dichlorophenoxy) (p-chlorophenyl)acetic acid;  
 1-(2,4-dichlorophenoxy)-2,3-epoxypropane; (2,4-dichlorophenoxy) fumaric acid;  
 Addnl. information in printed abstract

INDEX TERM: Weed control  
 (growth substances in, testing on broadleaf plants)

INDEX TERM: Fluorobates  
 (of organic bases, growth inhibition of plants by)

INDEX TERM: Plant regulators  
 (reviews on)

INDEX TERM: 1,3-Propanediol, 2-(p-aminobenzylamino)-2-(hydroxymethyl)-, dihydrochloride  
 1-Naphthaleneacetic acid, ar-chloro-  
 1-Naphthaleneacetic acid, ar-chloro-, ammonium salt  
 2-Naphthol-3,6-disulfonic acid, carbanilate, disodium salt  
 2',4'-Benzoxylidide, 4'-nitro-  
 Acetamide, 2-(2,5-dichlorophenylthio)-N,N-diphenyl-  
 Acetamide, 2-(4,7,7-trichloro-o-tolyloxy)-  
 Acetamide, 2-(4,7,7-trichloro-o-tolyloxy)-  
 Acetamide, N,N'-(4-methyl-m-phenylene)bis[2-(2,4-dichlorophenoxy)-  
 Acetamide, N-amidino-2-(2,4-dichlorophenoxy)-  
 Acetic acid, (4,7,7-trichloro-o-tolyloxy)-  
 Acetic acid, (tribromoxylloxy)-  
 Acetic acid, [2-bromo-2-chlorophenoxy]-  
 Acetic acid, [4-bromo-4-chlorophenoxy]-  
 Aniline, fluoborate  
 Aniline, m-bromo-, fluoborate  
 Benzoic acid, bromodichloro-, pentachlorophenyl ester  
 Butylamine, compound with HgCl<sub>2</sub>  
 Butyric acid, sulfonyldiethylene ester  
 Carbanilide, ar',2,5-trichloro-  
 Ethylenediamine, N,N-bis[2-hydroxy-1,1-bis(hydroxymethyl)ethyl]-, dihydrochloride  
 Glutaconic acid, cyanoethyl-3-methyl-, diethyl ester  
 Glycine, 2-(2,4-dichlorophenyl)-  
 Glycolic acid, α-carboxy-3,5-dichloro-o-anisate  
 Glycolic acid, α-carboxy-5-chloro-3-methyl-o-anisate  
 Indophenol, 2,6(or 3',5')-dichloro-, sodium salt  
 Nicotinonitrile, 5-ethyl-2,6-dihydroxy-4-methyl-, 6-mono-  
 Phenol, p-bromo-, carbamates  
 Quininic acid, ethyl ester  
 Sulfamic acid, (2,4,6-trichlorophenyl)-, sodium salt  
 Urea, (2-diethylamino-2-ethylbutyl)-  
 Urea, (chlorophenyl) (2,5-dichlorophenyl)-  
 o-Anisic acid, α-carboxy-3,5-dichloro-, carboxymethyl ester  
 o-Anisic acid, α-carboxy-5-chloro-3-methyl-, carboxymethyl ester  
 (growth inhibition of plants by)

INDEX TERM: 5438-19-7, Benzoic acid, p-propoxy- 15872-42-1, Benzoic acid, p-(heptyloxy)-  
 (alkylaminoalkyl ester hydrochlorides, growth inhibition of plants by)

INDEX TERM: 619-86-3, Benzoic acid, p-ethoxy-  
 (alkylaminoalkyl ester, hydrochlorides, growth inhibition



of plants by)

INDEX TERM: 1498-96-0, Benzoic acid, p-butoxy-  
(alkylaminoalkyl esters and their hydrochlorides, growth inhibition of plants by)

INDEX TERM: 83-56-7, 1,5-Naphthalenediol  
(and chlorinated derivs., growth inhibition of plants by)

INDEX TERM: 88-82-4, Benzoic acid, 2,3,5-triiodo- 573-54-6, Benzoic acid, 2-bromo-3-nitro- 943-14-6, Benzoic acid, 2-bromo-5-nitro- 16426-64-5, Benzoic acid, 2-bromo-4-nitro-  
(and derivs., growth inhibition of plants by)

INDEX TERM: 93-76-5, Acetic acid, (2,4,5-trichlorophenoxy)-  
(and esters, and hydrazides, growth inhibition of plants by)

INDEX TERM: 79-11-8, Acetic acid, chloro- 83-40-9, 2,3-Cresotic acid 88-06-2, Phenol, 2,4,6-trichloro- 94-74-6, Acetic acid, (4-chloro-o-tolyloxy)- 120-83-2, Phenol, 2,4-dichloro- 10129-78-9, Acetic acid, (2,4-dibromophenoxy)- 13333-87-4, Acetic acid, (4,6-dichloro-o-tolyloxy)- 13334-49-1, Acetic acid, 2,4-xylyloxy- 19094-75-8, Acetic acid, (6-chloro-o-tolyloxy)- 28203-59-0, Acetic acid, (benzylsulfonyl)- 105041-59-6, Acetic acid, (4-chloro-2-propylphenoxy)-  
(and esters, growth inhibition of plants by)

INDEX TERM: 108-95-2, Phenol  
(as growth inhibitor for plants)

INDEX TERM: 583-23-3, Acetic acid, (2-chloro-p-tolyloxy)- 588-20-5, Acetic acid, (4-chloro-m-tolyloxy)- 6964-28-9, Acetic acid, (4-chloro-2-ethylphenoxy)- 19774-97-1, Acetic acid, (4-chloro-2-cyclohexylphenoxy)- 102237-13-8, Acetic acid, (4-chloro-2-pentylphenoxy)- 439675-58-8, Acetic acid, (4-chloro-2-iodophenoxy)- 501008-64-6, Acetic acid, (4-chloro-a-cyano-o-tolyloxy)-  
(as growth substance)

INDEX TERM: 90-15-3, 1-Naphthol 122-59-8, Acetic acid, phenoxy- 135-19-3, 2-Naphthol 940-64-7, Acetic acid, p-tolyloxy-  
(as plant regulator)

INDEX TERM: 120-80-9, Pyrocatechol  
(as plant-growth regulator)

INDEX TERM: 69-72-7, Salicylic acid  
(carboxymethyl ester growth inhibition of plants by)

INDEX TERM: 328-42-7, Oxalacetic acid  
(cyclic derivative with aminoguanidine growth inhibition of plants by)

INDEX TERM: 98-67-9, 1-Phenol-4-sulfonic acid  
(derivs., growth inhibition of plants by)

INDEX TERM: 94-75-7, Acetic acid, (2,4-dichlorophenoxy)-  
(derivs., plant-growth inhibition by)

INDEX TERM: 112-92-5, 1-Octadecanol  
(detergents from coconut oil monoglyceride sulfate, with 2,4-D, growth inhibition of plants by)

INDEX TERM: 3147-55-5, Salicylic acid, 3,5-dibromo-  
(effect on plant growth)

INDEX TERM: 50-29-3, Ethane, 1,1,1-trichloro-2,2-bis(p-chlorophenyl)-  
(effect on plant mitosis)

INDEX TERM: 2200-81-9, Benzoic acid, o-butoxy-  
(esters and their hydrochlorides, growth inhibition of plants by)

INDEX TERM: 75-13-8, Isocyanic acid 501-82-6, Carbanilic acid  
(esters of, growth inhibition of plants by)

INDEX TERM: 87-86-5, Phenol, pentachloro- 93-51-6, Creosol 100-37-8, Ethanol, 2-diethylamino- 107-07-3, Ethanol, 2-chloro- 111-75-1, Ethanol, 2-butylamino- 115-20-8, Ethanol, 2,2,2-trichloro- 123-51-3, Isopentyl alcohol 540-51-2, Ethanol, 2-bromo- 609-31-4, 1-Butanol, 2-nitro- 1643-15-8, Acetic acid, m-tolyloxy- 2580-77-0, Ethanol, 2,2'-sulfonyldi- 35161-67-2, Ethanol, 2-pentylamino- (esters, growth inhibition of plants by)

INDEX TERM: 463-79-6, Carbonic acid  
(esters, growth substances for plants)

INDEX TERM: 10200-98-3, 1-Propanol, 2-butylamino-2-methyl- (esters, hydrochlorides, growth inhibition of plants by)

INDEX TERM: 122-88-3, Acetic acid, (p-chlorophenoxy)- (esters, phenylhydrazide, and piperidide, growth inhibition of plants by)

INDEX TERM: 6117-91-5, 2-Buten-1-ol  
(esters, with halo derivs. of phenoxy acetic acid, growth inhibition of plants by)

INDEX TERM: 76-39-1, 1-Propanol, 2-methyl-2-nitro- 141-43-5, Ethanol, 2-amino- (esters, with halo derivs. of phenoxyacetic acid, growth inhibition of plants by)

INDEX TERM: 14368-49-1, Benzenediazonium, p-nitro- 16278-29-8, Benzenediazonium, m-nitro- (fluoroborates, growth inhibition of plants by)

INDEX TERM: 5466-48-8, Acetic acid, (2,4-dichloro-1-naphthyl-oxo)- (growth activity of)

INDEX TERM: 131-08-8, 2-Anthraquinonesulfonic acid, sodium salt (growth control of plants by)

INDEX TERM: 858817-33-1, Acetamide, N-[1,1-bis(hydroxymethyl)ethyl]-2-(2,4-dichlorophenoxy)- (growth inhibition of plant by)

INDEX TERM: 860432-82-2, Sulfanilic acid, 2,5-dichloro-N-[(2,4-dichlorophenoxy)acetyl]-, sodium salt (growth inhibition of plants)

INDEX TERM: 50-73-7, Benzoic acid, 2,3,5-trichloro- 50-84-0, Benzoic acid, 2,4-dichloro- 51-28-5, Phenol, 2,4-dinitro- 60-09-3, Aniline, p-phenylazo- 62-23-7, Benzoic acid, p-nitro- 62-53-3, Aniline 62-56-6, Urea, thio- 63-99-0, Urea, m-tolyl- 64-10-8, Urea, phenyl- 67-51-6, Pyrazole, 3,5-dimethyl- 76-02-8, Acetyl chloride, trichloro- 76-03-9, Acetic acid, trichloro- 78-40-0, Triethyl phosphate 79-04-9, Acetyl chloride, chloro- 79-07-2, Acetamide, 2-chloro- 79-17-4, Guanidine, amino-, cyclic derivative with oxalacetic acid 79-40-3, Oxamide, dithio- 79-43-6, Acetic acid, dichloro- 80-46-6, Phenol, p-(1,1-dimethylpropyl)- 81-16-3, 1-Naphthalenesulfonic acid, 2-amino- 82-45-1, Anthraquinone, 1-amino- 82-75-7, 1-Naphthalenesulfonic acid, 8-amino- 84-86-6, Naphthionic acid 85-38-1, Salicylic acid, 3-nitro- 86-65-7, 1,3-Naphthalenedisulfonic acid, 7-amino- 87-64-9, o-Cresol, 6-chloro- 88-50-6, Sulfanilic acid, 2,5-dichloro- 88-65-3, Benzoic acid, o-bromo- 88-67-5, Benzoic acid, o-iodo- 88-99-3, Phthalic acid 89-25-8, 2-Pyrazolin-5-one, 3-methyl-1-phenyl- 89-55-4, Salicylic acid, 5-bromo- 90-05-1, Guaiacol 90-20-0, 1-Naphthol-3,6-disulfonic acid, 8-amino- 90-43-7, Phenol,

o-phenyl- 92-67-1, 4-Biphenylamine 92-69-3, Phenol,  
 p-phenyl- 94-82-6, Butyric acid, 4-(2,4-dichlorophenoxy)-  
 95-48-7, o-Cresol 95-51-2, Aniline, o-chloro- 95-65-8,  
 3,4-Xylenol 95-71-6, p-Toluhydroquinone 95-82-9,  
 Aniline, 2,5-dichloro- 95-87-4, 2,5-Xylenol 96-50-4,  
 Thiazole, 2-amino- 96-97-9, Salicylic acid, 5-nitro-  
 97-05-2, Salicylic acid, 5-sulfo- 98-14-6, Benzenearsonic  
 acid, p-hydroxy- 98-54-4, Phenol, p-tert-butyl- 98-60-2,  
 Benzenesulfonyl chloride, p-chloro- 98-64-6,  
 Benzenesulfonamide, p-chloro- 99-33-2, Benzoyl chloride,  
 3,5-dinitro- 99-96-7, Benzoic acid, p-hydroxy- 99-99-0,  
 Toluene, p-nitro- 100-23-2, Aniline, N,N-dimethyl-p-nitro-  
 100-54-9, Nicotinonitrile 102-07-8, Carbanilide  
 102-08-9, Carbanilide, thio- 102-12-5, Urea,  
 1-(2-hydroxyethyl)-3-phenyl-2-thio- 102-92-1, Cinnamoyl  
 chloride 103-01-5, Glycine, N-phenyl- 103-72-0,  
 Isothiocyanic acid, phenyl ester 103-85-5, Urea,  
 1-phenyl-2-thio- 103-90-2, Acetanilide, 4'-hydroxy-  
 104-04-1, Acetanilide, 4'-nitro- 105-67-9, 2,4-Xylenol  
 106-41-2, Phenol, p-bromo- 106-44-5, p-Cresol 106-47-8,  
 Aniline, p-chloro- 106-54-7, Benzenethiol, p-chloro-  
 107-09-5, Ethylamine, 2-bromo- 107-91-5, Acetamide,  
 2-cyano- 108-39-4, m-Cresol 108-42-9, Aniline, m-chloro-  
 108-46-3, Resorcinol 110-21-4, Biurea 114-38-5, Urea,  
 [o-chlorophenyl]- 115-86-6, Phenyl phosphate, (PhO)<sub>3</sub>PO  
 116-63-2, 2-Naphthol-4-sulfonic acid, 1-amino- 117-79-3,  
 Anthraquinone, 2-amino- 119-26-6, Hydrazine,  
 (2,4-dinitrophenyl)- 119-68-6, Anthranilic acid, N-methyl-  
 120-23-0, Acetic acid, (2-naphthoxy)- 120-67-2, Ethanol,  
 2-(2,4-dichlorophenoxy)- 121-81-3, Benzamide, 3,5-dinitro-  
 121-92-6, Benzoic acid, m-nitro- 122-01-0, Benzoyl  
 chloride, p-chloro- 122-04-3, Benzoyl chloride, p-nitro-  
 122-87-2, Glycine, N-(p-hydroxyphenyl)- 123-08-0,  
 Benzaldehyde, p-hydroxy- 123-30-8, Phenol, p-amino-  
 123-31-9, Hydroquinone 133-91-5, Salicylic acid,  
 3,5-diiodo- 136-35-6, Triazene, 1,3-diphenyl- 140-89-6,  
 Xanthic acid, ethyl-, potassium salt 142-08-5, 2-Pyridinol  
 148-18-5, Carbamic acid, diethyldithio-, sodium salt  
 149-91-7, Gallic acid 150-76-5, Phenol, p-methoxy-  
 300-87-8, Isoxazole, 3,5-dimethyl- 320-72-9, Salicylic  
 acid, 3,5-dichloro- 321-14-2, Salicylic acid, 5-chloro-  
 348-10-7, Acetic acid, (o-fluorophenoxy)- 349-82-6, Acetic  
 acid, (a,a,a-trifluoro-m-tolyloxy)-  
 403-97-4, m-Acetotoluidide,  
 2-(4-chloro-o-tolyloxy)-a,a,a-trifluoro-  
 403-98-5, m-Acetotoluidide,  
 2-(p-chlorophenoxy)-a,a,a-trifluoro-  
 451-88-7, Acetic acid, (4-fluoro-o-tolyloxy)- 483-84-1,  
 Flavianic acid 492-86-4, Mandelic acid, p-chloro-  
 504-29-0, Pyridine, 2-amino- 521-24-4,  
 1-Naphthalenesulfonic acid, 3,4-dihydro-3,4-dioxo-, sodium  
 salt 529-21-5,  $\beta$ -Collidine 533-58-4, Phenol,  
 o-iodo- 535-15-9, Acetic acid, dichloro-, ethyl ester  
 537-45-1, p-Benzoquinone imine, 2,6-dibromo-N-chloro-  
 537-47-3, Semicarbazide, 4-phenyl- 541-79-7, Carbamic  
 acid, (2,2,2-trichloro-1-hydroxyethyl)-, ethyl ester  
 543-54-4, Pyridine, sulfate 544-47-8, Pseudourea,  
 2-p-chlorobenzyl-2-thio-, hydrochloride 554-00-7, Aniline,  
 2,4-dichloro- 561-20-6, Cacotheline 575-89-3, Acetic

acid, (2,4,6-trichlorophenoxy)- 575-90-6, Acetic acid,  
 (2,6-dichlorophenoxy)- 582-54-7, Acetic acid,  
 [2,5-dichlorophenoxy]- 586-76-5, Benzoic acid, p-bromo-  
 587-64-4, Acetic acid, (3,5-dichlorophenoxy)- 587-65-5,  
 Acetanilide, 2-chloro- 587-90-6, Carbanilide,  
 4,4'-dinitro- 588-22-7, Acetic acid,  
 [3,4-dichlorophenoxy]- 588-32-9, Acetic acid,  
 [m-chlorophenoxy]- 589-96-8, 1-Propanol, 2,3-dichloro-,  
 acetate 590-92-1, Propionic acid, 3-bromo- 594-65-0,  
 Acetamide, 2,2,2-trichloro- 599-52-0,  
 2,5-Cyclohexadien-1-one, hexachloro- 607-56-7, Urea,  
 1,3-di-1-naphthyl- 607-66-9, Carbstyryl, 4-methyl-  
 607-95-4, Phenol, 2,4,6-tribromo-, acetate 609-85-8,  
 Anthranilic acid, 3,5-dibromo- 609-99-4, Salicylic acid,  
 3,5-dinitro- 614-61-9, Acetic acid, (o-chlorophenoxy)-  
 614-77-7, Urea, o-tolyl- 615-58-7, Phenol, 2,4-dibromo-  
 615-67-8, Hydroquinone, chloro- 618-51-9, Benzoic acid,  
 m-iodo- 619-56-7, Benzamide, p-chloro- 619-58-9, Benzoic  
 acid, p-iodo- 619-80-7, Benzamide, p-nitro- 620-50-8,  
 Carbanilide, 3,3'-dimethyl- 621-00-1, Carbanilide,  
 4,4'-dimethyl- 621-29-4, Toluene, m-isocyanato-  
 621-79-4, Cinnamide 621-88-5, Acetamide, 2-phenoxy-  
 621-92-1, Phenol, p-benzylamino-, hydrochloride 622-37-7,  
 Benzene, azido- 622-51-5, Urea, p-tolyl- 622-61-7,  
 Phenetole, p-chloro- 623-00-7, Benzonitrile, p-bromo-  
 623-07-4, Phenol, p-(chloromercuri)- 623-12-1, Anisole,  
 p-chloro- 627-03-2, Acetic acid, ethoxy- 634-47-9,  
 Lepidine, 2-chloro- 635-53-0, o-Anisic acid,  
 α-carboxy- 772-47-4, Sulfone, benzyl ethyl  
 774-74-3, Acetyl chloride, (2,4-dichlorophenoxy)- 777-08-2  
 , Acetyl chloride, (2,4,5-trichlorophenoxy)- 876-27-7,  
 Phenol, p-chloro-, acetate 926-39-6, Ethanol, 2-amino-,  
 hydrogen sulfate 1034-05-5, m-Acetotoluidide,  
 2-[4-chloro-o-tolyloxy]- 1074-52-8, Carbanilic acid,  
 dithio-, ammonium salt 1084-76-0, Glycine,  
 N-(2,4-dinitrophenyl)- 1122-41-4, Benzenethiol,  
 2,4-dichloro- 1197-55-3, Acetic acid, (p-aminophenyl)-  
 1197-56-4, Carbanilic acid, p-chlorodithio-, ammonium salt  
 1201-99-6, Cinnamic acid, 2,4-dichloro- 1217-25-0,  
 2H-1,3-Benzoxazine-2,4(3H)-dione, 3-phenyl- 1321-64-8,  
 Naphthalene, pentachloro- 1330-16-1, Pinene 1493-34-1,  
 2-Biphenylamine, fluoborate 1570-65-6, o-Cresol,  
 4,6-dichloro- 1615-02-7, Cinnamic acid, p-chloro-  
 1798-11-4, Acetic acid, [p-nitrophenoxy]- 1878-49-5,  
 Acetic acid, o-tolyloxy- 1878-66-6, Acetic acid,  
 (p-chlorophenyl)- 1878-87-1, Acetic acid,  
 [o-nitrophenoxy]- 1878-91-7, Acetic acid,  
 (p-bromophenoxy)- 1879-56-7, Acetic acid,  
 (o-bromophenoxy)- 1928-43-4, 1-Hexanol, 2-ethyl-,  
 (2,4-dichlorophenoxy)acetate 1932-32-7, Carbanilide,  
 4-nitro- 1932-36-1, Carbanilide, 2-chlorothio-  
 1943-87-9, Carbanilic acid, p-nitro-, methyl ester  
 1955-23-3, 3-Pyridinol, sulfate 1967-26-6, Carbanilide,  
 4-chloro- 1967-27-7, Urea, [m-chlorophenyl]- 1982-42-9,  
 Acetamide, 2-(2,4-dichlorophenoxy)- 2000-40-0, Urea,  
 (2,2,2-trichloro-1-hydroxyethyl)- 2000-54-6, Carbanilide,  
 3-nitro- 2008-71-1, Carbanilide, 3-chloro- 2150-88-1,  
 Carbanilic acid, m-chloro-, methyl ester 2210-73-3,  
 Propane, 1-(4-chloro-o-tolyloxy)-2,3-epoxy- 2212-05-7,  
 Propane, 1-(p-chlorophenoxy)-2,3-epoxy- 2212-07-9,

Propane, 1-(2,4-dichlorophenoxy)-2,3-epoxy- 2260-00-6,  
Pseudourea, 2-methyl-2-thio-, sulfate 2300-67-6, Acetic  
acid, (2,6-dichloro-4-nitrophenoxy)- 2327-17-5, Urea,  
1-phenyl-3-(2-pyridyl)- 2377-27-7, m-Acetotoluidide,  
 $\alpha, \alpha, \alpha$ -trifluoro-2-(2,4,5-trichlorophenoxy)-  
2436-79-5, 2,4-Pyrroledicarboxylic acid, 3,5-dimethyl-,  
diethyl ester 2516-96-3, Benzoic acid, 2-chloro-5-nitro-  
2563-97-5, Acetanilide, 2,2,2-trichloro- 2564-05-8,  
Acetanilide, 2,3'-dichloro- 2585-28-6, Benzanilide,  
2'-chloro-4-nitro- 2585-29-7, Benzanilide,  
3'-chloro-4-nitro- 2585-30-0, Benzanilide,  
4'-chloro-4-nitro- 2645-36-5, 1-Piperidinecarboxanilide  
2667-20-1, Xanthic acid, methyl-, potassium salt  
2789-92-6, Anthranilic acid, 3,5-dichloro- 2877-14-7,  
Acetic acid, (pentachlorophenoxy)- 2909-38-8, Phenol,  
m-chloro-, isocyanate 2989-97-1, Carbanilide, 3-bromo-  
2989-99-3, Carbanilide, 2-chloro- 3016-39-5, Hydantoic  
acid, 5-phenyl- 3023-72-1, 1-Piperidinecarboxanilide,  
3'-chloro- 3112-87-6, Sulfone, allyl p-tolyl 3112-90-1,  
Sulfone, benzyl methyl 3112-93-4, Sulfone, benzyl butyl  
3185-71-5, Carbanilide, 4-phenyl- 3274-12-2,  
2,5-Cyclohexadien-1-one, 4-methyl-4-(trichloromethyl)-  
3284-79-5, Propionic acid, 3-(p-chlorophenoxy)- 3284-80-8,  
Propionic acid, 3-(2,4-dichlorophenoxy)- 3289-75-6,  
Acetanilide, 2,4'-dichloro- 3337-62-0, Benzoic acid,  
3,5-dibromo-4-hydroxy- 3405-88-7, Acetic acid,  
(p-chlorophenylthio)- 3406-75-5, Acetic acid,  
(p-nitrophenylthio)- 3422-01-3, tert-Butyl alcohol,  
carbanilate 3547-07-7, Butyric acid, 4-(p-chlorophenoxy)-  
3563-14-2, Succinilic acid, 4'-sulfamoyl- 3598-10-5,  
Acetanide, 2-(p-chlorophenoxy)- 3598-13-8, Acetonitrile,  
(p-chlorophenoxy)- 3717-28-0, Benzaldehyde, o-chloro-,  
oxime 3746-53-0, Carbanilide, 4-methoxy- 3747-47-5,  
Urea, 1-(2-hydroxyethyl)-3-phenyl-  
(growth inhibition of plants by)  
3773-14-6, Benzenethiol, 2,4,5-trichloro- 3921-30-0, Decyl  
phosphate, (C10H21O)(HO)2PO 3956-63-6, Acetonitrile,  
(2,4-dichlorophenoxy)- 3970-35-2, Benzoic acid,  
2-chloro-3-nitro- 3991-73-9, Octyl phosphate,  
(C8H17O)(HO)2PO 4001-73-4, Benzamide, o-bromo-  
4068-58-0, Salicylic acid, 3-bromo-5-chloro- 4122-68-3,  
Acetyl chloride, (p-chlorophenoxy)- 4251-08-5,  
Carbanilide, 3-chlorothio- 4286-99-1, Acetic acid,  
( $\alpha$ ,4-dichloro-o-tolyloxy)- 4300-35-0, Carbanilide,  
2-nitro- 4323-68-6, Acetic acid, (o-aminophenoxy)-  
4345-85-1, Carbanilide, 4-ethoxy- 4386-40-7, 2,3-Cresotic  
acid, 5-chloro- 4418-61-5, Tetrazole, 5-amino-  
4459-90-9, Urea, 1-[m-chlorophenyl]-3-(2-hydroxyethyl)-  
4628-39-1, 4-Pyrimidineacetic acid,  
1,2,3,6-tetrahydro-2,6-dioxo- 4698-95-7, Propane,  
1,2-epoxy-3-( $\alpha, \alpha, \alpha$ -trifluoro-o-tolyloxy)-  
4791-23-5, Urea, 1-chloroacetyl-3-phenyl- 5031-71-0, Urea,  
1-[1-naphthyl]-3-phenyl- 5205-43-6, Urea,  
[(2,4-dichlorophenoxy)acetyl]- 5306-98-9, o-Cresol,  
5-chloro- 5326-47-6, Anthranilic acid, 5-iodo-  
5326-89-6, Acetic acid, 8-quinolyloxy- 5342-23-4,  
Carbostyryl, 6-methoxy-4-methyl- 5392-86-9, Phenetole,  
2,4-dichloro- 5395-20-0, Sulfone, benzyl p-tolyl  
5395-36-8, 5-Pyrimidinecarboxylic acid,

INDEX TERM:

1,2,3,4-tetrahydro-6-methyl-2-oxo-4-phenyl-, ethyl ester  
 5396-70-3, Ethylene glycol, acetate carbanilate 5397-71-7,  
 Acetic acid, (5-amino-2,4-dichlorophenoxy)- 5398-69-6,  
 Benzoic acid, 2-iodo-3-nitro- 5402-73-3, Benzenesulfonyl  
 chloride, 2,5-dichloro- 5406-14-4, Acetic acid,  
 3,5-xylyloxy- 5411-11-0, Acetic acid, (6-chlororothymyloxy)-  
 5435-83-6, Acetic acid, (decylsulfonyl)- 5438-88-0,  
 Acetamide, N-1-naphthyl-2-(2,4,5-trichlorophenoxy)-  
 5465-90-7, Glycine, N-(p-chlorophenyl)- 5466-49-9, Acetic  
 acid, (4-tert-butyl-2-chlorophenoxy)- 5663-04-7, Urea,  
 1,1,3-triphenyl- 5811-07-4, Oxanilide, 4',4''-disulfamoyl-  
 6174-78-3, 2,3-Cresotic acid, 5-iodo- 6258-66-8,  
 $\alpha$ -Toluenethiol, p-chloro- 6262-34-6, Glycine,  
 N-1-naphthyl- 6269-39-2, Acetanilide,  
 2'-chloro-2-(p-chlorophenoxy)- 6278-04-2, 2-Naphthol,  
 1- $\alpha$ -piperidinobenzyl- 6286-30-2, Hydrocinnamic acid,  
 $\alpha,\beta$ -dibromo- 6288-61-5,  
 2,5-Cyclohexadien-1-one,  
 2-chloro-4-methyl-4-(trichloromethyl)-, oxime 6295-41-6,  
 Sulfide, bis(2,4-dichlorobenzyl) 6299-42-9, Urea,  
 1-[2-naphthyl]-3-phenyl- 6307-83-1, Benzoic acid,  
 3-bromo-5-nitro- 6319-40-0, Benzoic acid, 4-bromo-3-nitro-  
 6333-15-9, Benzanilide, 4,4'-dinitro- 6336-01-2, Urea,  
 1-butyl-3-phenyl-2-thio- 6340-55-2, Lepidine,  
 2-chloro-6-methoxy- 6597-79-1, Acetyl chloride,  
 (4-chloro-o-tolyloxy)- 6950-43-2, Benzoic acid,  
 5-bromo-2-nitro- 6956-79-2, 2,5-Cyclohexadien-1-one,  
 2,6-dichloro-4-methyl-4-(trichloromethyl)- 6956-82-7,  
 Acetic acid, (4-bromo-o-tolyloxy)- 6956-85-0, Acetic acid,  
 (o-chlorophenoxy)-, methyl ester 6956-86-1, Butyric acid,  
 2-(2,4-dichlorophenoxy)- 6961-49-5, Glycine,  
 N-(o-chlorophenyl)- 6964-24-5, 2-Propen-1-ol, 2-methyl-,  
 (p-chlorophenoxy)acetate 6964-25-6, Acetic acid,  
 ( $\alpha$ ,4-dichloro-o-tolyloxy)-, ethyl ester 6964-26-7,  
 Acetic acid, (2-allyl-4-chlorophenoxy)- 6964-27-8,  
 Ethylene glycol, p-chlorophenoxyacetate (mono-) 6964-29-0,  
 Acetic acid, (p-bromophenoxy)-, ethyl ester 6974-56-7,  
 Acetanilide, 2,2',4'-trichloro- 7031-25-6, Acetyl  
 chloride, (p-chlorophenylthio)- 7195-78-0, Salicylic acid,  
 5-chloro-3-nitro- 7250-62-6, Acetic acid,  
 (4,6-dibromo-o-tolyloxy)- 7292-81-1, p-Toluic acid,  
 $\alpha$ -amino- $\alpha$ -carboxy- 7356-41-4, Acetic acid,  
 2,5-xylyloxy- 7392-67-8, Carbanilide, 4-chlorothio-  
 7399-57-7, Acetamide, 2-(4-chloro-o-tolyloxy)- 7399-59-9,  
 Acetamide, 2-(4-chloro-m-tolyloxy)- 7401-79-8, Fumaric  
 acid, (2,4-dichlorophenoxy)- 7462-15-9,  
 1,3-Dioxolane-4-methanol, 2,2-dimethyl-,  
 (4-chloro-o-tolyloxy)acetate 7462-16-0, Heptanoic acid,  
 2-(2,4-dichlorophenoxy)-, ethyl ester 7462-17-1,  
 Acetamide, 2-(p-chlorophenoxy)-N-2-hydroxyethyl-  
 7462-18-2, Acetamide,  
 2-(4-chloro-o-tolyloxy)-N-2-hydroxyethyl- 7470-81-7,  
 Lauric acid, ester with 2,2'-sulfonyldiethanol 7506-44-7,  
 Benzanilide, 2',5'-dichloro-4-nitro- 7554-78-1, Mandelic  
 acid, 2,4-dichloro- 7720-41-4, Acetic acid,  
 (2,4-dichlorophenylthio)- 7720-45-8, Benzenesulfonamide,  
 2,5-dichloro- 10017-53-5, Acetamide, 2-m-tolyloxy-  
 10129-56-3, 4-Pyridine ethanol,  $\alpha$ -(trichloromethyl)-  
 10169-50-3, Salicylic acid, 5-bromo-3-nitro- 10282-57-2,

Benzanilide, 2-bromo- 10286-91-6, Benzanilide,  
 2-bromo-2',4'-dichloro- 10397-66-7, Acetamide,  
 N-methyl-2-(2,4,5-trichlorophenoxy)- 10428-63-4, Acetic  
 acid, (decylthio)- 13114-76-6, Carbanilide, 2,3-dimethyl-  
 13114-83-5, Carbanilide, 2-phenyl- 13114-91-5,  
 Carbanilide, 2-bromo- 13114-92-6, Carbanilide, 4-bromo-  
 13142-07-9, Carbanilide, 4'-bromo-2-chloro- 13142-09-1,  
 Carbanilide, 4'-bromo-3-chloro- 13142-25-1, Carbanilide,  
 2,3',5-trichloro- 13142-41-1, Carbanilide,  
 2-chloro-2'-nitro- 13142-54-6, Carbanilide, 2,4-dichloro-  
 13142-56-8, Carbanilide, 2,5-dichloro- 13176-46-0,  
 Acetoacetic acid, 4-bromo-, ethyl ester 13208-19-0,  
 Carbanilide, 2,2'-dichloro- 13208-21-4, Carbanilide,  
 2,3'-dichloro- 13208-31-6, Carbanilide, 3,3'-dichloro-  
 13208-32-7, Carbanilide, 3,4'-dichloro- 13208-67-8,  
 Carbanilide, 2-chloro-3'-nitro- 13208-68-9, Carbanilide,  
 2,4'-dichloro- 13246-96-3, Acetanilide,  
 2-(2,4-dichlorophenoxy)- 13252-23-8, Carbanilide,  
 2-chloro-4'-nitro- 13256-85-4, Urea,  
 1-[o-chlorophenyl]-3-(1-naphthyl)- 13256-91-2, Urea,  
 1-(1-naphthyl)-3-(2-pyridyl)- 13257-12-0, Carbanilide,  
 2'-chloro-2,4-dimethyl- 13257-14-2, Urea,  
 1-[p-chlorophenyl]-3-(1-naphthyl)- 13335-73-4, Acetic  
 acid, 3,4-xylyloxy- 13359-22-3, Acetohydroxamic acid,  
 (2,4-dichlorophenoxy)- 13484-79-2, Butyric acid,  
 4-(2,4-dichlorophenoxy)-, ammonium salt 13509-41-6,  
 Carbanilic acid, thio-, methyl ester 13528-25-1,  
 Carbanilide, 2,4-dichlorothio- 13559-66-5, Camphor, oxime  
 13911-40-5, Biuret, 1-phenyl- 14176-30-8, Carbanilide,  
 2,5-dichlorothio- 15118-82-8, Acetic acid,  
 (2,6-dichloro-p-tolyloxy)- 15396-38-0, Benzoic acid,  
 2,3,5-tribromo- 15396-39-1, Benzoic acid,  
 2-bromo-3,5-dichloro- 15516-43-5, Acetyl chloride,  
 o-tolyloxy- 15516-45-7, Acetyl chloride, 2,4-xylyloxy-  
 15516-47-9, Acetyl chloride, p-tolyloxy- 15790-84-8,  
 Sulfamic acid, phenyl-, sodium salt 15866-95-2,  
 1-Naphthalenecarbamic acid, dithio-, ammonium salt  
 15866-98-5, Carbanilic acid, p-methoxydithio-, ammonium salt  
 15866-99-6, Carbanilic acid, p-bromodithio-, ammonium salt  
 15904-03-7, Propionic acid, 3-(2,4-xylyloxy)- 15945-07-0,  
 Benzenesulfonyl chloride, 2,4,5-trichloro- 16518-23-3,  
 Benzoic acid, p-bromo-, ammonium salt 17231-93-5, Acetic  
 acid, (3,5-dichlorophenylthio)- 17518-48-8, Acetamide,  
 2-(p-chlorophenylthio)- 17614-10-7, Carbamic acid,  
 isopropyl-, phenyl ester 18288-24-9, Acetamide,  
 2-[2,4,5-trichlorophenoxy]- 18288-25-0, Acetonitrile,  
 (2,4,5-trichlorophenoxy)- 18619-15-3, Acetic acid,  
 o-tolylthio- 18619-18-6, Acetic acid,  
 (o-chlorophenylthio)- 18619-34-6, Benzoic acid,  
 p-(carboxymethylthio)- 18705-01-6, Acetanilide, 2-phenoxy-  
 18824-43-6, Urea, 1-amidino-3-phenyl- 18861-19-3,  
 Acetanilide, 4'-bromo-2-phenoxy- 18879-92-0, Carbanilic  
 acid, p-iododithio-, ammonium salt 19039-68-0, Acetamide,  
 2-(2,4-dichlorophenoxy)-N,N-diethyl- 19039-69-1,  
 Acetamide, 2-(p-chlorophenoxy)-N,N-diethyl- 19039-77-1,  
 Acetanilide, 2-(2,4,5-trichlorophenoxy)- 19063-16-2,  
 Sulfamic acid, (p-chlorophenyl)- 19270-09-8,  
 3-Pyridinesulfonic acid, barium salt 19335-99-0,  
 Acetamide, 2-(2,4-dichlorophenoxy)-N,N-bis(2-hydroxyethyl)-  
 19336-01-7, Acetamide,

N-2-hydroxyethyl-2-(2,4,5-trichlorophenoxy)- 19336-18-6,  
 Acetamide, 2-(2,4-dichlorophenoxy)-N-2-hydroxyethyl-  
 19922-81-7, Hydrocinnamide,  $\alpha$ , $\beta$ -dibromo-  
 20260-53-1, Nicotinoyl chloride, hydrochloride 21248-54-4,  
 Acetic acid, (2,4,5-trichlorophenylthio)- 21439-45-2,  
 Carbamic acid, butyldithio-, mercury salt 21456-12-2,  
 o-Anisic acid,  $\alpha$ -carboxy-5-chloro-, methyl ester  
 21758-94-1, Acetic acid, (2-acetyl-4-chlorophenoxy)-  
 22303-26-0, Acetanilide, 2,2',5'-trichloro- 22303-34-0,  
 Acetanilide, 2,2',4',6'-tetrachloro- 22458-67-9,  
 Cyclohexanesulfamic acid, sodium salt 22560-43-6,  
 Acetamide, 2-o-tolyloxy- 23536-86-9, Acetamide,  
 2-(2,4,5-trichlorophenylthio)- 23566-17-8, Disulfide,  
 bis(p-chlorobenzyl) 23566-23-6, Sulfide,  
 bis(p-chlorobenzyl) 23603-53-4, Acetanilide,  
 2-(2,4,5-trichlorophenylthio)- 24316-50-5,  
 2,6-Pyridinediol, 3-ethyl-4-methyl- 24355-83-7, Fumaric  
 acid, (p-chlorophenoxy)- 25141-25-7, Acetic acid,  
 (2,4-dinitrophenoxy)- 25141-38-2, Acetic acid,  
 (5-chloro-o-tolyloxy)- 25178-72-7, Acetic acid,  
 (7-chloro-1-naphthylthio)- 25364-62-9, Acetic acid,  
 o-tolyloxy-, pentyl ester 26683-60-3, Urea,  
 1-butyl-3-[m-chlorophenyl]- 26878-34-2, Pyridine,  
 2,6-diamino-, monohydrochloride 27378-80-9, Toly  
 phosphate 29092-27-1, Benzenesulfonamide, 2,4,5-trichloro-  
 29114-24-7, 2-Naphthol, 1,1'-benzylidenedi- 29289-81-4,  
 p-Acetophenetide, 2-(p-chlorophenoxy)- 30714-45-5,  
 Carbanilic acid, p-hydroxydithio-, ammonium salt  
 32022-38-1, Acetic acid, (4-chloro-o-tolyloxy)-, hydrazide  
 32403-69-3, Acetic acid, (2,4-dinitrophenylthio)-  
 33458-26-3, 5-Pyrimidinecarboxylic acid,  
 1,2,3,4-tetrahydro-6-methyl-4-phenyl-2-thioxo-, ethyl ester  
 34851-26-8, Allophanic acid, 4-phenyl-, ethyl ester  
 35368-57-1, Acetamide, 2-p-tolyloxy- 35368-59-3,  
 Acetamide, 2-(2,4-xylyloxy)- 35368-75-3, Acetamide,  
 2-(p-bromophenoxy)- 35368-77-5, Acetamide,  
 2-(2-naphthylthio)- 35674-20-5, Benzoic acid, 3,4-diiodo-  
 35674-21-6, Benzoic acid, 2,4,5-triiodo- 36194-82-8,  
 2,3-Cresotic acid, 5-bromo- 36441-29-9,  
 14H-Dibenzo[a,j]xanthene, 14-phenyl- 38206-97-2, Acetic  
 acid, (2,6-dibromo-p-tolyloxy)- 38383-43-6, Ethylene  
 glycol, (2,4-dichlorophenoxy)acetate (mono-) 38383-43-6,  
 Ethylene glycol, (2,4-dichlorophenoxy)acetate (mono-)  
 39489-65-1, Piperidine, 1-[(p-chlorophenoxy)acetyl]-  
 39489-66-2, Piperidine, 1-[(2,4-dichlorophenoxy)acetyl]-  
 39621-01-7, 4-Picoline, 2,6-dichloro-3-ethyl- 39621-05-1,  
 Nicotinonitrile, 5-ethyl-2,6-dihydroxy-4-methyl-  
 39680-96-1, Glycine, N-dithiocarboxy-, ammonium salt  
 39784-11-7, Acetyl chloride, (4-chloro-m-tolyloxy)-  
 39994-77-9, 1-Naphthalenecarbamic acid, pentyl ester  
 40912-86-5, 2,3-Cresotamide, 5-nitro- 40926-72-5, Acetyl  
 chloride, m-tolyloxy- 40926-80-5, Acetyl chloride,  
 (2,4,6-trichlorophenoxy)- 42344-05-8, Aniline,  
 N,N-dimethyl-p-nitroso-, hydrochloride 42860-33-3, Benzoyl  
 chloride, 2,3,5-triiodo- 46125-42-2, Propionitrile,  
 3-(p-chlorophenoxy)- 49791-53-9, 2-Naphthalenecarbamic  
 acid, dithio-, ammonium salt 49791-55-1,  
 1-Piperidinecarbodithioic acid, ammonium salt 49808-81-3,  
 Acetamide, N-(2-aminoethyl)-2-(2,4-dichlorophenoxy)-  
 50390-26-6, Salicylic acid, 3-bromo-5-sulfo- 52094-97-0,



Acetic acid, (o-chlorophenoxy)-, ethyl ester 52377-68-1,  
 Acetic acid, (p-chlorophenylthio)-, ethyl ester  
 53663-15-3, Acetic acid, (p-arsonophenoxy)- 53894-47-6,  
 Acetyl chloride, (2,4-dichlorophenylthio)- 54245-36-2,  
 2-Naphthoic acid, 3-ethoxy- 54480-60-3, Nicotinonitrile,  
 2,6-dihydroxy-4-methyl-, ammonium salt 54674-88-3,  
 2,3-Cresotic acid, 5-nitro- 56609-17-7, Salicylic acid,  
 3-nitro-5-sulfo- 56759-60-5, 3,5-Xylenol, 2,4,6-tribromo-  
 56878-84-3,  $\alpha$ -Toluenesulfonic acid, 2,4-dichloro-,  
 sodium salt 57226-02-5, Acetic acid,  
 (p-chlorophenyl) (2,4-dichlorophenoxy)- 57226-04-7, Acetic  
 acid, (p-chlorophenoxy) (p-chlorophenyl)- 57665-05-1,  
 Picolinic acid, sodium salt 58001-13-1, 4-Pyridine  
 ethanol, 3-ethyl- $\alpha$ -(trichloromethyl)- 58083-92-4,  
 2-Propanol, 1-chloro-3-p-toluidino- 59280-03-4,  
 Benzanilide, 4'-bromo-4-nitro- 59293-67-3,  
 $\alpha$ -Toluenethiol, 2,4-dichloro- 59908-84-8, Acetic  
 acid, (4-chloro-o-tolylxy)-, anhydride 60770-15-2,  
 o-Anisic acid,  $\alpha$ -carboxy-3-methyl- 61206-70-0,  
 1,3-Propanediol, 2-benzylamino-2-(hydroxymethyl)-  
 61524-51-4, Resorcinol, 4,6-dibromo- 62095-57-2,  
 Acetanilide, 3'-chloro-2-(p-chlorophenoxy)- 62095-59-4,  
 Acetanilide, 4'-bromo-2-(p-chlorophenoxy)- 62095-62-9,  
 p-Acetotoluidide, 2-(p-chlorophenoxy)- 62095-64-1,  
 p-Acetanilide, 2-(p-chlorophenoxy)-  
 (growth inhibition of plants by)  
 63867-25-4, Butyronitrile, 4-(2,4-dichlorophenoxy)-  
 65051-31-2, Acetic acid, (2,4-dichlorobenzylthio)-  
 68715-89-9, 1,3-Propanediol,  
 2-(2,4-dinitroanilino)-2-(hydroxymethyl)- 68967-25-9,  
 Octadecanoic acid, 2-(2,4-dichlorophenoxy)- 70439-09-7,  
 Benzamide, 2,4,5-trichloro- 71609-20-6, Benzamide,  
 2,3,5-triiodo- 72214-67-6, Pseudourea,  
 2-(2,4-dichlorobenzyl)-2-thio-, hydrochloride 72757-96-1,  
 Carbanilic acid, p-nitrothio-, ammonium salt 74815-20-6,  
 3(2H)-Benzofuranone, 5,7-dichloro- 75004-50-1,  
 Acetanilide, 2-(2,4-dichlorophenoxy)-3'-nitro- 75270-30-3,  
 Acetyl chloride, (2-biphenylxyloxy)- 77228-65-0, Acetic  
 acid, (2,4-diiodophenoxy)- 77228-66-1, Acetic acid,  
 [2-bromo-4-chlorophenoxy]- 77228-67-2, Acetic acid,  
 [4-bromo-2-chlorophenoxy]- 77851-23-1, Urea, naphthyl-  
 79979-69-4, 1-Naphthoic acid, 2-amino- 81294-21-5,  
 2,5-Cyclohexadien-1-one, 4-methyl-4-(trichloromethyl)-,  
 oxime 82473-57-2, Ethylene glycol,  
 (4-chloro-o-tolylxy)acetate (mono-) 83479-80-5, Sulfamic  
 acid, (p-bromophenyl)-, sodium salt 83631-29-2, Acetic  
 acid, (2,4-dichloro-5-nitrophenoxy)- 84794-72-9, Acetic  
 acid, (chloro-p-phenylenedioxy)di- 88691-50-3,  
 $\alpha$ -Toluenesulfonyl chloride, 2,4-dichloro-  
 89938-74-9, Glycine, N-(2,5-dichlorophenyl)- 90649-82-4,  
 Acetic acid, (p-chlorobenzylthio)- 90650-12-7, Acetamide,  
 2-(2,4-dichlorophenoxy)-N-methyl- 90793-77-4, Acetic acid,  
 (2,4-dichlorophenylthio)-, ethyl ester 91495-28-2,  
 Acetamide, N-butyl-2-(2,4,5-trichlorophenoxy)- 91802-77-6,  
 Acetamide, N-butyl-2-(p-chlorophenylthio)- 92152-91-5,  
 Acetanilide, 2-(2,4-dichlorophenoxy)-4'-nitro- 92153-38-3,  
 Acetanilide, 4'-chloro-2-(2,4-dichlorophenoxy)-  
 92435-95-5, p-Acetotoluidide, 2-(2,4-dichlorophenoxy)-  
 93535-08-1, Acetanilide, 2-(p-chlorophenylthio)-

INDEX TERM:

93696-65-2, Hydrocinnamoyl chloride,  $\alpha,\beta$ -dibromo-  
 93869-73-9, Acetamide, 2-(2,4-dichlorophenoxy)-N-1-naphthyl-  
 94023-54-8, Carbamic acid, 2-hydroxyethylthio-, sodium  
 salt 98995-18-7, Carbanilic acid, p-sulfamoyl-,  
 2-chloroethyl ester 99277-71-1, Benzoic acid,  
 4-bromo-2-nitro- 99419-71-3, Carbanilide, 2,4,6-trichloro-  
 99514-85-9, Benzanilide, 2'-bromo-4-nitro- 99514-87-1,  
 Benzanilide, 3'-bromo-4-nitro- 99567-42-7, Pseudourea,  
 3-[(2,4-dichlorophenoxy)acetyl]-2-methyl-2-thio-  
 100129-52-0, Acetamide, 2-(4-chloro-2-propylphenoxy)-  
 101420-81-9, Benzoic acid, 3-bromo-4-nitro- 101991-63-3,  
 p-Acetanilide, 2-(2,4-dichlorophenoxy)- 101991-68-8,  
 Acetanilide, 4'-bromo-2-(2,4-dichlorophenoxy)-  
 102023-82-5, Acetamide,  
 2-(2,4-dichlorophenoxy)-N,N-diphenyl- 102466-92-2,  
 1-Naphthol, 1-naphthalenecarbamate 105911-57-7, Acetic  
 acid, (2-sec-butyl-4-chlorophenoxy)- 107676-66-4,  
 Carbanilide, 2-chloro-2'-phenyl- 108085-52-5, Glycolic  
 acid, salicylate 108654-38-2, Carbanilic acid,  
 2,4-dimethylthio-, ammonium salt 109075-56-1,  
 1-Piperidinecarboxanilide, 2'-chloro- 112160-74-4,  
 Acetanilide, N,2',4'-trichloro- 112658-18-1, Quinolinium,  
 1-ethyl-, iodide, compound with Ph<sub>2</sub>NH 113912-88-2,  
 Acetamide, 2-(2,4-dichlorophenoxy)-N-(2-hydroxy-1,1-  
 dimethylethyl)- 114426-27-6, Salicylic acid, glycine ester  
 115175-13-8, Benzanilide, 4'-iodo-4-nitro- 115893-67-9,  
 Acetamide, (2,4-dichlorophenylthio)- 116346-23-7, Butyric  
 acid, 4-(octylthio)- 116529-61-4, Benzoic acid,  
 3-bromo-2-nitro- 117947-05-4, Acetic acid,  
 (2-bromo-4-tert-butylphenoxy)- 118672-20-1, Acetic acid,  
 (p-chlorobenzylsulfonyl)- 129399-22-0,  
 2,5-Cyclohexadien-1-one,  
 2-chloro-4-methyl-4-(trichloromethyl)- 133348-05-7,  
 3-Quinolinecarboxylic acid, 2-phenyl- 133541-26-1,  
 Alanine, 3-(4-hydroxy-3-nitrophenyl)-, nitrate (salt)  
 135202-68-5, Acetanilide, 2-iodo-4'-sulfamoyl-  
 135983-18-5, m-Cresol, 4-chloro-, carbanilate 136263-89-3,  
 Acetanilide, 2-(p-chlorophenoxy)-2'-nitro- 136263-90-6,  
 Acetamide, 2-(p-chlorophenoxy)-N-1-naphthyl- 136263-91-7,  
 Acetamide, 2-(p-chlorophenoxy)-N-2-naphthyl- 139194-55-1,  
 Acetamide, 2-(2,4-dichlorophenoxy)-N-2-naphthyl-  
 141776-95-6, Acetamide,  
 N,N'-p-phenylenebis[2-(2,4-dichlorophenoxy)- 142387-54-0,  
 Sulfamic acid, (m-chlorophenyl)-, sodium salt 143733-27-1,  
 p-Anisidine, fluoborate 144977-85-5, Lactic acid, butyl  
 ester, 1-naphthalenecarbamate 146903-23-3, Acetamide,  
 N,N'-p-phenylenebis[2-o-tolyloxy- 146903-28-8,  
 4',4'''-Biacetanilide, 2,2''-bis(o-tolyloxy)- 146903-32-4,  
 4',4'''-Biacetanilide, 2,2''-bis(p-chlorophenoxy)-  
 149590-70-5, Sulfamic acid, (2,5-dichlorophenyl)-  
 155809-45-3, Carbanilic acid, p-carboxyditio-, ammonium  
 salt 162086-19-3, Acetamide,  
 N,N'-m-phenylenebis[2-o-tolyloxy- 175987-80-1, Acetyl  
 chloride, (2,4,5-trichlorophenylthio)- 177430-74-9,  
 Carbanilide, 2-bromo-3'-chloro- 177430-75-0, Carbanilide,  
 3-bromo-3'-chloro- 186307-04-0, Phthalic acid,  
 tetrabromo-, sodium salt 186307-04-0, Phthalic acid,  
 tetrabromo-, sodium salt 188065-31-8, Disulfide,  
 bis(2,4-dichlorobenzyl) 189503-89-7, Acetanilide,  
 2'-chloro-2-(2,4,5-trichlorophenoxy)- 191093-42-2,

Acetamide, 2-(p-chlorophenoxy)-N,N-bis(2-hydroxyethyl)-  
 195383-25-6, Acetanilide, 4'-bromo-2-(p-chlorophenylthio)-  
 195512-03-9, Urea, 1-butyl-3-[o-chlorophenyl]-  
 196617-05-7, Benzoic acid, p-[3-(m-chlorophenyl)ureido]-  
 197160-90-0, Acetanilide,  
 2',5'-dichloro-2-(p-chlorophenoxy)- 197160-93-3,  
 2',4'-Acetoxyldide, 2-(p-chlorophenoxy)- 197161-14-1,  
 Acetanilide, 2-(p-chlorophenoxy)-3'-nitro- 197513-04-5,  
 p-Acetophenetidide, 2-(p-chlorophenylthio)- 197513-37-4,  
 Acetanilide, 3'-chloro-2-(2,4,5-trichlorophenoxy)-  
 197799-19-2, Urea, 1-(2,4-dichlorophenyl)-3-(1-naphthyl)-  
 197799-19-2, Urea, 1-(2,4-dichlorophenyl)-3-(1-naphthyl)-  
 198009-92-6, Acetanilide,  
 2',5'-dichloro-2-(2,4,5-trichlorophenoxy)- 198276-29-8,  
 2',4'-Acetoxyldide, 2-(2,4,5-trichlorophenoxy)-  
 199735-25-6, 2',4'-Acetoxyldide, 2-(2,4-dichlorophenoxy)-  
 199803-30-0, Acetanilide,  
 4'-chloro-2-(2,4,5-trichlorophenoxy)- 200422-35-1,  
 Acetanilide, 3'-nitro-2-(2,4,5-trichlorophenoxy)-  
 221119-53-5, Acetic acid, (octylsulfonyl)-, methyl ester  
 262589-80-0, 4',4'''-Biacetanilide,  
 2,2''-bis(2,4-dichlorophenoxy)- 262589-82-2,  
 4',4'''-Bi-o-acetotoluidide, 2,2''-bis(2,4-dichlorophenoxy)-  
 288611-50-7, Acetamide, 2-[2,4,6-trichlorophenoxy]-  
 300402-86-2, Carbanilide, 2-bromo-2'-chloro- 300700-02-1,  
 Acetic acid, (2,4-dichlorobenzylsulfonyl)- 301233-90-9,  
 Anthraquinone, 1-[2-(2,4-dichlorophenoxy)acetamido]-  
 303795-30-4, Acetanilide, 2-(p-bromophenoxy)-4'-chloro-  
 306316-33-6, Acetanilide,  
 2-(2,4-dichlorophenoxy)-4'-phenylazo- 324546-96-5,  
 Acetanilide, 2-(p-chlorophenoxy)-4'-phenyl- 326882-52-4,  
 Pyridine, 2-[2-(2,4-dichlorophenoxy)acetamido]-  
 327074-86-2, Acetanilide,  
 2'-bromo-2-(2,5-dichlorophenylthio)- 327074-87-3,  
 Acetanilide, 3'-bromo-2-(2,5-dichlorophenylthio)-  
 327074-88-4, Acetanilide,  
 3'-chloro-2-(2,5-dichlorophenylthio)- 327074-99-7,  
 p-Acetotoluidide, 2-(2,4-dichlorophenylthio)- 328002-11-5,  
 Piperidine, 1-[(2,4,5-trichlorophenoxy)acetyl]-  
 329078-71-9, Acetanilide, 2'-bromo-2-(p-chlorophenylthio)-  
 330459-48-8, Acetanilide, 2'-bromo-2-(p-chlorophenoxy)-  
 331270-67-8, Acetanilide, 2-(p-bromophenoxy)-2',5'-dichloro-  
 331270-68-9, Acetanilide,  
 2',5'-dichloro-2-(2,4-dichlorophenoxy)- 331753-76-5,  
 Acetanilide, 3'-bromo-2-(p-chlorophenoxy)- 334758-22-4,  
 o-Anisic acid,  $\alpha$ -carboxy-5-chloro- 338960-27-3,  
 Acetic acid, (5-amino-2,4-dichlorophenoxy)-, ethyl ester  
 340221-07-0, Acetamide,  
 N,N'-m-phenylenebis[2-(2,4-dichlorophenoxy)- 345633-20-7,  
 Acetamide, 2-(p-chlorophenoxy)-N-methyl- 346720-71-6,  
 Acetanilide, 2-(4-chloro-o-tolylxy)-4'-phenylazo-  
 349404-31-5, Acetanilide, 2-(2,4-dichlorophenoxy)-2'-phenyl-  
 349426-44-4, Acetanilide, 3'-bromo-2,2-trichloro-  
 349474-84-6, 4',4'''-Bi-o-acetotoluidide,  
 2,2''-bis(o-tolylxy)- 349618-66-2, Acetanilide,  
 2-(p-chlorophenoxy)-4'-iodo- 349622-80-6,  
 4',4'''-Bi-o-acetotoluidide, 2,2''-bis(p-chlorophenoxy)-  
 349637-44-1, p-Acetophenetidide, 2-(2,4-dichlorophenoxy)-  
 350038-79-8, Toluene-2,4-diamine,  
 N,N'-bis[(2,4-dichlorophenoxy)acetyl]- 353471-96-2,

p-Acetanilide, 2-(2,4-xylyloxy)- 353472-55-6,  
 p-Acetotoluidide, 2-(2,4-xylyloxy)- 360777-17-9,  
 Benzaldehyde, o-chloro-, O-(carboxymethyl)oxime  
 363572-84-3, Acetanilide, 3'-bromo-2-(p-chlorophenylthio)-  
 392708-61-1, Carbanilide, 3-chloro-4'-phenyl- 403834-29-7,  
 m-Acetotoluidide, 2-(p-chlorophenylthio)- 406710-34-7,  
 Acetanilide, 2-(2,4-dichlorophenoxy)-4'-phenyl-  
 408507-32-4, 1-Propanol, 2-methyl-2-pentylamino-, ester  
 hydrochlorides 425631-86-3, p-Acetotoluidide,  
 2-(4,6-dichloro-o-tolyloxy)- 425633-25-6, Acetanilide,  
 2',5'-dichloro-2-(4,6-dichloro-o-tolyloxy)- 425645-33-6,  
 Anthraquinone, 2-[2-(2,4,5-trichlorophenoxy)acetamido]-  
 425646-91-9, Anthraquinone,  
 2-[2-(2,4-dichlorophenoxy)acetamido]- 425649-88-3,  
 m-Acetotoluidide, 2-(4,6-dichloro-o-tolyloxy)-  
 425650-83-5, Acetanilide,  
 4'-chloro-2-(4,6-dichloro-o-tolyloxy)- 425654-44-0,  
 Anthraquinone, 2-[2-(2,4-xylyloxy)acetamido]- 433258-22-1,  
 Acetamide, N-2-naphthyl-2-(2,4,5-trichlorophenoxy)-  
 433313-96-3, Acetanilide,  
 4'-bromo-2-(2,4,5-trichlorophenoxy)- 438478-15-0,  
 Acetanilide, 4'-chloro-2-(2,4-xylyloxy)- 439286-54-1,  
 Acetamide, N-(2-aminoethyl)-2-(2,4,5-trichlorophenoxy)-  
 443665-31-4, Acetanilide, 4'-bromo-2-(p-bromophenoxy)-  
 448198-39-8, m-Acetotoluidide, 2-(2,4-xylyloxy)-  
 451514-00-4, o-Cresol, 4-chloro-,  
 (2,4-dichlorophenoxy)acetate 452366-84-6, Acetanilide,  
 2',4'-dichloro-2-(2,5-dichlorophenylthio)- 452366-89-1,  
 p-Acetanilide, 2-(2,5-dichlorophenylthio)- 452367-13-4,  
 Acetanilide, 2-(2,5-dichlorophenylthio)- 457618-83-6,  
 Acetanilide, 2',4'-dichloro-2-(2,4-xylyloxy)- 461033-07-8,  
 p-Acetotoluidide, 2-(2,4,5-trichlorophenoxy)- 461033-64-7,  
 Acetanilide, 2'-nitro-2-(2,4,5-trichlorophenoxy)-  
 461034-08-2, m-Acetotoluidide, 2-(2,4,5-trichlorophenoxy)-  
 461395-33-5, p-Acetanilide, 2-(2,4,5-trichlorophenoxy)-  
 461437-55-8, Hydrocinnamic acid,  
 p-chloro- $\alpha,\beta$ -epoxy- $\beta$ -methyl-, ethyl ester  
 462616-74-6, Acetanilide,  
 2'-bromo-2-(2,4,5-trichlorophenoxy)- 471255-21-7,  
 Allophanic acid, 4-(m-chlorophenyl)-, ethyl ester  
 476629-44-4, Aniline, p-bromo-, fluoborate 500285-31-4,  
 Sulfone, bis(2,4-dichlorobenzyl) 500285-32-5, Acetic acid,  
 [4'-chloro-2-biphenyloxy]- 500285-33-6, Acetic acid,  
 [2'-chloro-2-biphenyloxy]- 500285-36-9, Nicotinic acid,  
 5-ethyl-2,6-dihydroxy-4-methyl-, ethyl ester 500579-45-3,  
 Phenol, 2,4-dibromo-, carbanilate 500794-24-1, Acetic  
 acid, (2-chloro-4-iodophenoxy)- 501008-49-7, Acetamide,  
 2-(4,6-dichloro-o-tolyloxy)- 501008-50-0, Acetamide,  
 2-(p-chlorophenoxy)-N-[2-hydroxy-1,1-  
 bis(hydroxymethyl)ethyl]- 501008-51-1, Acetamide,  
 2-(6-chloro-o-tolyloxy)- 501008-52-2, 2,3-Cresotol  
 chloride, 5-chloro- 501008-53-3, 2,3-Cresotol chloride,  
 5-bromo- 501008-54-4, Anthraquinone,  
 2-[2-(2,4,6-trichlorophenoxy)acetamido]- 501008-58-8,  
 Acetanilide, 2-(6-chloro-o-tolyloxy)- 501008-59-9,  
 Acetanilide, 4'-chloro-2-(6-chloro-o-tolyloxy)-  
 501008-60-2, Acetamide, N-butyl-2-(6-chloro-o-tolyloxy)-  
 501008-60-2, Acetamide, N-butyl-2-(6-chloro-o-tolyloxy)-  
 501008-62-4, Acetanilide,  
 2',4',6'-trichloro-2-(2,4-xylyloxy)- 501008-68-0,

Sulfanilic acid, N-[(2,4-dichlorophenoxy)acetyl]-  
 501008-69-1, Hydroquinone, chloro-, dicarbanilate  
 501008-71-5, Acetamide, N-amidino-2-(2,4-dichlorophenoxy)-  
 501008-72-6, Urea, 1-[o-chlorophenyl]-3-(2-hydroxyethyl)-  
 501008-73-7, Acetanilide,  
 2',4',6'-trichloro-2-(2,4,5-trichlorophenoxy)-  
 501008-74-8, Anthraquinone,  
 1-[2-(2,4,5-trichlorophenoxy)acetamido]- 501008-75-9,  
 Acetanilide, 4'-phenyl-2-(2,4,5-trichlorophenoxy)-  
 501008-76-0, Acetanilide,  
 2',4',6'-trichloro-2-(2,4-dichlorophenoxy)- 501008-77-1,  
 Sulfanilic acid, N-[(4-chloro-o-tolylloxy)acetyl]-  
 501008-78-2, o-Cresol, 6-chloro-, carbanilate 501008-79-3,  
 1-Naphthalenesulfonic acid,  
 2-[2-(2,4-dichlorophenoxy)acetamido]- 501008-80-6,  
 Naphthionic acid, N-[(2,4-dichlorophenoxy)acetyl]-  
 501008-81-7, 1-Naphthalenesulfonic acid,  
 2-[2-(p-chlorophenoxy)acetamido]- 501008-82-8, Naphthionic  
 acid, N-[1-(p-chlorophenoxy)acetyl]- 501008-85-1, Acetic  
 acid, (2,4-dichloro-5-nitrophenoxy)-, ethyl ester  
 501008-86-2, Acetic acid, (3-bromo-4-biphenyloxy)-, ethyl  
 ester 501008-88-4, Benzoic acid, p-[3-(1-naphthyl)ureido]-  
 501008-89-5, Urea, 1-(1-naphthyl)-3-(2-thiazolyl)-  
 501008-90-8, Ethylene glycol, acetate 1-naphthalenecarbamate  
 501008-92-0, Benzaldehyde, p-hydroxy-,  
 1-naphthalenecarbamate 501008-93-1, 3,4-Xylenol,  
 1-naphthalenecarbamate 501008-94-2, 2,5-Xylenol,  
 1-naphthalenecarbamate 501074-43-7, Benzoyl chloride,  
 2-bromo-3,5-dichloro- 501074-44-8, Benzamide,  
 2-bromo-3,5-dichloro- 501074-45-9, Benzoic acid,  
 2-bromo-3,5-dichloro-, ethyl ester 501074-46-0,  
 Benzanilide, 2-bromo-3,5-dichloro- 501074-47-1,  
 Benzanilide, 2,3'-dibromo-3,5-dichloro- 501074-48-2,  
 Benzanilide, 2,4'-dibromo-3,5-dichloro- 501074-49-3,  
 Benzanilide, 2-bromo-3,4',5-trichloro- 501074-50-6,  
 Benzanilide, 2-bromo-2',3,4',5-tetrachloro- 501074-51-7,  
 Benzamide, 2-bromo-N-butyl-3,5-dichloro- 501074-52-8,  
 m-Acetotoluidide, 2-(2,4,5-trichlorophenylthio)-  
 501074-53-9, Acetanilide,  
 2'-bromo-2-(2,4,5-trichlorophenylthio)- 501074-54-0,  
 Acetanilide, 3'-bromo-2-(2,4,5-trichlorophenylthio)-  
 501074-55-1, Acetanilide,  
 4'-bromo-2-(2,4,5-trichlorophenylthio)- 501074-56-2,  
 Acetanilide, 3'-chloro-2-(2,4,5-trichlorophenylthio)-  
 501074-57-3, Acetanilide,  
 2',4'-dichloro-2-(2,4,5-trichlorophenylthio)- 501074-58-4,  
 Acetamide, N-butyl-2-(2,4,5-trichlorophenylthio)-  
 501941-41-9, Butyronitrile, 4-(p-chlorophenoxy)-  
 501941-41-9, Butyronitrile, 4-(p-chlorophenoxy)-  
 585518-43-0, Acetyl chloride, (4,6-dichloro-o-tolylloxy)-  
 586331-27-3, p-Acetophenetide, 2-(2,4,5-trichlorophenoxy)-  
 625820-74-8, Acetic acid, (3-bromo-4-biphenyloxy)-  
 651298-28-1, Acetamide,  
 N,N'-p-phenylenebis[2-(2,4-xylyloxy)- 651298-30-5,  
 4',4'''-Bi-o-acetotoluidide, 2,2'''-bis(2,4-xylyloxy)-  
 651298-30-5, 4',4'''-Bi-o-acetotoluidide,  
 2,2'''-bis(2,4-xylyloxy)- 657409-37-5, Acetamide,  
 2-(2-biphenyloxy)- 690244-67-8, Carbanilide,  
 3'-bromo-2-chloro- 690258-78-7, Carbanilic acid,  
 p-phenyldithio-, ammonium salt 690259-39-3, Carbanilide,

2-chloro-4'-phenyl- 690259-40-6, Carbanilide,  
 3'-chloro-2-phenyl- 690268-54-3, 2,3-Cresotoyl chloride,  
 5-nitro-  
 (growth inhibition of plants by)  
 INDEX TERM: 690268-55-4, o-Cresol, 4-chloro-, carbanilate 690268-58-7,  
 o-Cresol, 5-chloro-, carbanilate 690268-73-6, Ethanethiol,  
 2-bromo-, p-ethoxybenzoate 722457-36-5, Acetamide,  
 2-(2,4-dichlorophenoxy)-N-[1-(hydroxymethyl)propyl]-  
 722459-48-5, Acetamide,  
 2-(2,5-dichlorophenylthio)-N,N-diphenyl- 723259-93-6,  
 Acetamide, N,N'-m-phenylenebis[2-(2,4-xylyloxy)-  
 724440-96-4, Acetamide,  
 2-(2,4-dichlorophenoxy)-N-[2-hydroxy-1,1-  
 bis(hydroxymethyl)ethyl]-N-[2-hydroxy-3-[[2-hydroxy-1,1-  
 bis(hydroxymethyl)ethyl]amino]propyl]- 724707-23-7, Acetic  
 acid, (5-bromo-2,4-dichlorophenoxy)- 727313-87-8, Sulfamic  
 acid, (o-bromophenyl)- 780003-04-5, Sulfamic acid,  
 (m-bromophenyl)- 791837-24-6, Acetamide,  
 N,N-bis(2-hydroxyethyl)-2-(2,4,5-trichlorophenoxy)-  
 793681-19-3, Acetamide,  
 2-(4-chloro-o-tolylloxy)-N-(2-hydroxy-1-methylethyl)-  
 814919-84-1, 1-Propanol, 2-ethylamino-2-methyl-,  
 p-butoxybenzoate, hydrochloride 815603-65-7,  
 Toluene-2,4-diamine, N,N'-bis(2,4-xylyloxyacetyl)-  
 815603-72-6, Acetamide,  
 N,N'-(4-methyl-m-phenylene)bis[2-(p-chlorophenoxy)-  
 815603-72-6, Toluene-2,4-diamine,  
 N,N'-bis[p-chlorophenoxy]acetyl]- 815603-76-0,  
 Toluene-2,4-diamine, N,N'-bis(o-tolylloxyacetyl)-  
 845655-88-1, 1-Naphthol-3,6-disulfonic acid,  
 7-[2-(4-chloro-o-tolylloxy)acetamido]- 845727-26-6,  
 Nicotinamide, 2,6-dichloro-5-ethyl-4-methyl- 848006-46-2,  
 Carbanilic acid, m-methyl-, 2-methoxy-p-tolyl ester  
 848252-77-7, Carbanilic acid, p-methyl-, 2-methoxy-p-tolyl  
 ester 854160-51-3, m-Benzotoluidide, 2-bromo-3,5-dichloro-  
 854208-74-5, 4',4'''-Biacetanilide, 2,2''-bis(2,4-xylyloxy)-  
 854464-61-2, 1-Butanol, 2-ethylamino-, p-ethoxybenzoate,  
 hydrochloride 854656-18-1, Urea,  
 1-(1-naphthyl)-3-(2-naphthyl)- 854664-06-5, Acetic acid,  
 diphenyl-, 2-methyl-2-pentylaminopropyl ester, hydrochloride  
 854879-29-1, Cinnamic acid, p-chloro-, ammonium salt  
 854910-27-3, Carbanilide, 3-chloro-2,4-dimethyl-  
 855152-81-7, Butyric acid, 2-(2,4-dichlorophenoxy)-,  
 ammonium salt 855412-89-4, Phenol, o-iodo-, carbanilate  
 855415-78-0, Phenol, p-methoxy-, 1-naphthalenecarbamate  
 855470-14-3, Benzoic acid, p-(hexyloxy)-,  
 2-butylamino-2-methylpropyl ester, hydrochloride  
 855470-14-3, Benzoic acid, p-(hexyloxy)-,  
 2-butylamino-2-methylpropyl ester, hydrochloride  
 855471-36-2, o-Anisic acid,  $\alpha$ -carboxy-3,5-dichloro-  
 855634-66-1, Lactic acid, isopropyl ester,  
 1-naphthalenecarbamate 855888-41-4, Guanidine,  
 [2-(2,4-dichlorophenoxy)acetamido]- 855888-41-4, Acetic  
 acid, (2,4-dichlorophenoxy)-, 2-amidinohydrazide  
 855888-41-4, Acetamide, 2-(2,4-dichlorophenoxy)-N-guanidino-  
 855927-81-0, Acetamide,  
 N-[1,1-bis(hydroxymethyl)propyl]-2-(2,4-dichlorophenoxy)-  
 855928-90-4, Acetanilide, 2-(2-biphenyloxy)-3'-phenyl-  
 855932-60-4, Acetanilide,  
 4'-phenylazo-2-(2,4,5-trichlorophenoxy)- 855932-87-5,

Acetic acid, diphenyl-, 2-butylaminoethyl ester, hydrochloride 855938-32-8, Acetyl chloride, (6-chloro-o-tolyloxy)- 856065-05-9, Naphthionic acid, N-(2,4-xylyloxyacetyl)- 856077-50-4, 2-Naphthoic acid, 3-isopropoxy- 856077-84-4, 2-Naphthoic acid, 3-propyl- 856187-93-4, Mercury chloride, HgCl<sub>2</sub>, compound with 2,5-dichloroaniline 856187-93-4, Aniline, 2,5-dichloro-, compound with HgCl<sub>2</sub> 856188-04-0, Mercury chloride, HgCl<sub>2</sub>, compound with BuNH<sub>2</sub> 856189-54-3, Acetic acid, [p-(chloromercuri)phenoxy]- 856189-54-3, Mercury, [p-(carboxymethoxy)phenyl]-, chloride 856196-86-6, 1,3-Naphthalenedisulfonic acid, 7-[2-(4-chloro-o-tolyloxy)acetamido]- 856375-14-9, Ethanol, 2-ethylamino-, diphenylacetate, hydrochloride 856375-14-9, Acetic acid, diphenyl-, 2-ethylaminoethyl ester, hydrochloride 856818-13-8, 1-Propanol, 2-methyl-2-propylamino-, p-(heptyloxy)benzoate, hydrochloride 856837-76-8, Picric acid, carbamate 857005-43-7, p-Toluhydroquinone, di-1-naphthalenecarbamate 857230-61-6, Propionamide, 2-amino-3-(2,4-dichlorophenoxy)- 857233-22-8, 1-Propanol, 2-hexylamino-2-methyl-, p-ethoxybenzoate, hydrochloride 857236-06-7, 1,3-Propanediol, 2-[benzyl[2-hydroxy-3-[(2-hydroxy-1,1-bis(hydroxymethyl)ethyl)amino]propyl]amino]-2-(hydroxymethyl)- 857236-06-7, 2-Propanol, 1-[benzyl[2-hydroxy-1,1-bis(hydroxymethyl)ethyl]amino]-3-[(2-hydroxy-1,1-bis(hydroxymethyl)ethyl)amino]- 857534-29-3, Benzanilide, 2,2'-dibromo-3,5-dichloro- 857534-53-3, Benzanilide, 2-bromo-3,3',5-trichloro- 857537-48-5, Benzoic acid, 3,5-dibromo-4-hydroxy-, carbanilate 857538-83-1, Benzoic acid, p-hydroxy-, carbanilate 857556-10-6, Acetic acid, diphenyl-, 2-butylaminoisobutyl ester, hydrochloride 857568-90-2, m-Acetotoluidide, 2-(6-chloro-o-tolyloxy)- 857569-68-7, p-Acetotoluidide, 2-(6-chloro-o-tolyloxy)- 857570-53-7, Acetyl bromide, (2,4-dichlorophenoxy)- 857599-60-1, o-Anisic acid, α-carboxy-3-methyl-5-nitro-, carboxymethyl ester 857599-60-1, Glycolic acid, α-carboxy-3-methyl-5-nitro-o-anisate 857599-65-6, o-Anisic acid, α-carboxy-, carboxymethyl ester 857599-65-6, Glycolic acid, α-carboxy-o-anisate 857599-95-2, p-Anisic acid, 2-butylaminoethyl ester, hydrochloride 857602-97-2, Anthraquinone, 2-[2-(2-biphenyloxy)acetamido]- 857641-33-9, Aniline, p-chloro-, fluoborate 857943-96-5, Acetamide, 2-(2,4-dichlorophenoxy)-N-[2-hydroxy-1,1-bis(hydroxymethyl)ethyl]- 857949-00-9, Acetanilide, 2',5'-dichloro-2-(6-chloro-o-tolyloxy)- 857949-73-6, Acetanilide, 2-(4,6-dichloro-o-tolyloxy)- 857949-80-5, Acetanilide, 2',5'-dichloro-2-(2-methoxy-p-tolyloxy)- 857953-58-3, Acetanilide, N-2-naphthyl-2-(2,4-xylyloxy)- 858030-92-9, 2-Naphthol-7-sulfonic acid, carbanilate, sodium salt 858197-05-4, Mercury, (5-chloro-2-hydroxy-4-biphenyl)-, hydroxide 858197-05-4, Phenol, 4-chloro-5-(hydroxymercuri)-2-phenyl- 858200-46-1, 1,3-Naphthalenedisulfonic acid, 7-[2-(2,4-dichlorophenoxy)acetamido]- 858201-43-1, 1-Naphthalenesulfonic acid, 8-[2-(2,4-dichlorophenoxy)acetamido]- 858440-57-0,

4-Morpholine ethanol,  $\beta, \beta$ -bis(hydroxymethyl)-, hydrochloride 858440-57-0, 1,3-Propanediol, 2-(hydroxymethyl)-2-morpholino-, hydrochloride 858465-03-9, 1-Naphthalenesulfonic acid, 8-[2-(4-chloro-o-tolyloxy)acetamido]- 858465-05-1, 1-Naphthalenesulfonic acid, 2-[2-(4-chloro-o-tolyloxy)acetamido]- 858465-07-3, 1-Naphthalenesulfonic acid, 8-[2-(p-chlorophenoxy)acetamido]- 858465-83-5, 1-Naphthalenesulfonic acid, [2-(2,4,6-trichlorophenoxy)acetamido]- 858479-83-1, Semicarbazide, 1-[(2,4-dichlorophenoxy)acetyl]-1-phenyl- 858817-59-1, Acetamide, N-butyl-2-(4,6-dichloro-o-tolyloxy)- 858818-30-1, Acetamide, 2-(p-chlorophenoxy)-N-[2-hydroxy-1,1-bis(hydroxymethyl)ethyl]-N-[2-hydroxy-3-[2-hydroxy-1,1-bis(hydroxymethyl)ethylamino]propyl]-, hydrochloride 858818-74-3, Acetamide, 2-(4-chloro-o-tolyloxy)-N,N-bis(2-hydroxyethyl)- 859053-22-8, 1,3-Propanediol, 2,2'-(2-aminoethylimino)bis[2-(hydroxymethyl)-, dihydrochloride 859053-65-9, 1,3-Propanediol, 2-(2,3-dibromopropylamino)-2-methoxy-, hydrobromide 859054-09-4, 1,3-Propanediol, 2,2'-(hexamethylenediimino)bis[2-(hydroxymethyl)-, dihydrochloride 859061-06-6, Pseudourea, 2-[(2,4-dichlorophenoxy)acetyl]-2-thio- 859326-46-8, Urea, 1-(6-amino-2-pyridyl)-3-phenyl- 859733-19-0, Urea, 1,1-bis(2,2,2-trichloro-1-hydroxyethyl)- 859781-57-0, 2,4-Xylenol, 1-naphthalenecarbamate 859996-47-7, Nicotinonitrile, 5-ethyl-2,6-dihydroxy-4-methyl-, dicarbanilate 860364-55-2, 1-Naphthol-3,6-disulfonic acid, 8-[2-(p-chlorophenoxy)acetamido]- 860433-04-1, Sulfanilic acid, N-p-nitrobenzoyl-, potassium salt 860507-42-2, Salicylic acid, 1-naphthalenecarbamate 860695-83-6, Benzoic acid, o-butoxy-, 2-isopropylaminoethyl ester, hydrochloride 860696-02-2, Benzoic acid, o-(butylthio)-, 2-butylaminoethyl ester 860697-61-6, Benzoic acid, p-[1-(o-chlorophenyl)ureido]- 860699-32-7, Benzoic acid, p-pentyloxy-, 2-butylamino-2-methylpropyl ester, hydrochloride 860701-92-4, Betaine hydrazide, N1-(2,4-dichlorophenoxyacetyl)- 861057-15-0, Acetamide, N,N-diphenyl-2-(2,4,5-trichlorophenylthio)- 861058-16-4, Acetamide, N-[2-hydroxy-1,1-bis(hydroxymethyl)ethyl]-2-(2,4,5-trichlorophenoxy)- 861058-18-6, Acetamide, N-[2-hydroxy-1,1-bis(hydroxymethyl)ethyl]-N-[2-hydroxy-3-[[2-hydroxy-1,1-bis(hydroxymethyl)ethylamino]propyl]-2-(2,4,5-trichlorophenoxy)-, hydrochloride 861058-27-7, Acetamide, N-2-hydroxyethyl-2-(2,4,5-trichlorophenylthio)- 861058-92-6, Acetamide, N,N'-m-phenylenebis[2-(2,4,5-trichlorophenoxy)- 861065-42-1, Acetic acid, (p-dithiocarboxyaminophenyl)-, sodium salt 861065-76-1, Acetic acid, diphenyl-, 2-pentylaminoethyl ester, hydrochloride 861066-09-3, Acetic acid, (1-naphthylloxy)-, ammonium salt 861066-48-0, Acetic acid, (5-nitro-2-pyridyloxy)- 861067-14-3, Acetic acid, (2,4,5-trichlorophenylthio)-, ethyl ester 872306-95-1, Heptanoic acid, 2-(4-chloro-o-tolyloxy)-, ethyl ester 872306-96-2, Heptanoic acid, 2-(p-chlorophenoxy)- 872799-52-5, 1-Naphthol-3,6-disulfonic acid,



8-[2-(2,4-dichlorophenoxy)acetamido]- 873396-39-5,  
 1,3-Propanediol, 2-(hydroxymethyl)-2-(p-nitrobenzylamino)-  
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 α-carboxy-5-chloro-3-methyl- 874006-20-9, Glycolic  
 acid, 5-bromo-2-(carboxymethoxy)-m-toluate 874006-20-9,  
 Glycolic acid, 5-bromo-2-(carboxymethoxy)-m-toluate  
 874006-92-5, Heptanoic acid, 2-(4-chloro-o-tolyloxy)-  
 874006-93-6, Heptanoic acid, 2-(p-chlorophenoxy)-, ethyl  
 ester 874506-02-2, Sulfanilic acid,  
 N-[(2,4,6-trichlorophenoxy)acetyl]- 874506-02-2,  
 Sulfanilic acid, N-[(2,4,6-trichlorophenoxy)acetyl]-  
 875245-95-7, o-Anisic acid,  
 5-bromo-α-carboxy-3-methyl- 875247-30-6, Heptanoic  
 acid, 2-(2,4-dichlorophenoxy)- 875248-61-6, Hydroquinone,  
 bis(1-naphthalenecarbamate) 875248-61-6, Hydroquinone,  
 bis(1-naphthalenecarbamate) 875257-87-7, Acetamide,  
 N,N'-p-phenylenebis[2-(2,4,5-trichlorophenoxy)-  
 875816-27-6, Acetic acid, (2-sec-butyl-4-chlorophenoxy)-,  
 ethyl ester 875817-47-3, Acetic acid,  
 [4-chloro-2-(2,3-dichloropropyl)phenoxy]- 875820-90-9,  
 Acetamide, N,N-diphenyl-2-(2,4,5-trichlorophenoxy)-  
 875820-90-9, Acetamide,  
 N,N-diphenyl-2-(2,4,5-trichlorophenoxy)- 878762-59-5,  
 Ethanol, 2-isobutylamino-, p-butoxybenzoate, hydrochloride  
 878762-59-5, Ethanol, 2-isobutylamino-, p-butoxybenzoate,  
 hydrochloride 902273-44-3, Fumaric acid,  
 (4-chloro-o-tolyloxy)-  
 (growth inhibition of plants by)  
 INDEX TERM: 847643-09-8, Carbanilic acid, p-(carboxymethyl)dithio-,  
 sodium salt 855935-12-5, Acetanilide,  
 2',4',6'-trichloro-2-(p-chlorophenoxy)-  
 (growth inhibition of plants, by)  
 INDEX TERM: 643-43-6, Acetic acid, (2,4-dinitrophenyl)-  
 (growth substance activity of)  
 INDEX TERM: 66-22-8, Uracil  
 (growth-inhibiting effect on plants)  
 INDEX TERM: 109-56-8, Ethanol, 2-isopropylamino-, butoxybenzoates  
 (hydrochlorides, growth inhibition of plants  
 by)  
 INDEX TERM: 68-35-9, Sulfadiazine 74-11-3, Benzoic acid, p-chloro-  
 121-57-3, Sulfanilic acid  
 (plant growth inhibition by)  
 INDEX TERM: 553-82-2, Anisole, 2,4-dichloro-  
 (plant growth-regulating effect of)  
 INDEX TERM: 51-79-6, Carbamic acid, ethyl ester 57-67-0,  
 Sulfaguandine 127-79-7, Sulfamerazine 144-83-2,  
 Sulfapyridine 7163-25-9, 2-Napthoic acid, 3-hydroxy-,  
 ethyl ester  
 (plant-growth inhibition by)  
 INDEX TERM: 776-75-0, Benzoic acid, piperidine  
 (plant-growth-inhibition by)  
 INDEX TERM: 7145-91-7P, 1,3-Propanediol,  
 2,2'-(2-hydroxytrimethylene)diimino[bis[2-(hydroxymethyl)-,  
 dihydrochloride 146903-27-7P, Acetamide,  
 N,N'-p-phenylenebis[2-(p-chlorophenoxy)- 162086-24-0P,  
 Acetamide, N,N'-m-phenylenebis[2-(p-chlorophenoxy)-  
 872287-85-9P, 2,5-Cyclohexadien-1-one,  
 4-methyl-4-(trichloromethyl)-, O-(carboxymethyl)oxime  
 872287-85-9P, Hydroxylamine,  
 O-(carboxymethyl)-N-[4-methyl-4-(trichloromethyl)-2,5-

10/810211

cyclohexadien-1-ylidene]- 872287-85-9P, Acetic acid,  
[4-methyl-4-(trichloromethyl)-2,5-cyclohexadien-1-  
ylideneamino-oxy]-  
ROLE: PREP (Preparation)  
(preparation of)

INDEX TERM: 63-74-1, Sulfanilamide  
(toxicity of, to plants)

OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (4  
CITINGS)

DATE LAST CITED: Date last citing reference entered STN: 16 Feb 2009

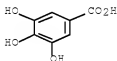
OS.CITING.REFS: CAPLUS 2006:908710; 2005:479312; 2000:148019; 1997:698412

IT 149-91-7, Gallic acid

(growth inhibition of plants by)

RN 149-91-7 ZCAPLUS

CN Benzoic acid, 3,4,5-trihydroxy- (CA INDEX NAME)



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(FILE 'HOME' ENTERED AT 09:34:49 ON 28 AUG 2009)

FILE 'REGISTRY' ENTERED AT 09:34:56 ON 28 AUG 2009

L1 STRUCTURE UPLOADED  
 L2 STRUCTURE UPLOADED  
 L3 50 SEA SSS SAM L1 AND L2  
 D STAT QUE  
 L4 0 SEA SSS SAM L2  
 L5 6619 SEA SSS FUL L1 AND L2  
 SAVE TEMP L5 BRO211L1L2/A

FILE 'ZCAPLUS' ENTERED AT 09:44:03 ON 28 AUG 2009

L6 26435 SEA SPE=ON ABB=ON PLU=ON L5  
 E US2004-810211 /APPS  
 L7 1 SEA SPE=ON ABB=ON PLU=ON US2004-810211 /AP  
 D SCA  
 SEL RN

FILE 'REGISTRY' ENTERED AT 09:46:38 ON 28 AUG 2009

L8 4 SEA SPE=ON ABB=ON PLU=ON (1132-21-4/BI OR 141112-29-0/BI OR  
 173159-57-4/BI OR 530-57-4/BI)  
 D SCA  
 L9 1 SEA SPE=ON ABB=ON PLU=ON 141112-29-0  
 L10 1 SEA SPE=ON ABB=ON PLU=ON 173159-57-4  
 L11 2 SEA SPE=ON ABB=ON PLU=ON (L9 OR L10)

FILE 'ZCAPLUS' ENTERED AT 09:49:52 ON 28 AUG 2009

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E E7+ALL/CT

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 L13 374345 SEA SPE=ON ABB=ON PLU=ON ?SEED?/BI  
 L14 222949 SEA SPE=ON ABB=ON PLU=ON ?PROPAGAT?/BI  
 L15 95842 SEA SPE=ON ABB=ON PLU=ON ?HERBICID?/BI  
 L16 610849 SEA SPE=ON ABB=ON PLU=ON ?ICID?/BI  
 L17 13955 SEA SPE=ON ABB=ON PLU=ON ?BIOCID?/BI  
 L18 67493 SEA SPE=ON ABB=ON PLU=ON AGRO?/BI  
 L19 99601 SEA SPE=ON ABB=ON PLU=ON AGRI?/BI  
 L20 959 SEA SPE=ON ABB=ON PLU=ON ?SAFENER?/BI  
 L21 63339 SEA SPE=ON ABB=ON PLU=ON ?ADJUVANT?/BI  
 L22 7342 SEA SPE=ON ABB=ON PLU=ON ?ANTIDOTE?/BI  
 L23 353363 SEA SPE=ON ABB=ON PLU=ON 5/CC, SX, SC  
 L24 462 SEA SPE=ON ABB=ON PLU=ON L11  
 L25 298 SEA SPE=ON ABB=ON PLU=ON ?PHYTOCID?/BI  
 L26 25907 SEA SPE=ON ABB=ON PLU=ON WEED CONTROL?/BI  
 L27 268 SEA SPE=ON ABB=ON PLU=ON WEEDICID?/BI  
 L28 2 SEA SPE=ON ABB=ON PLU=ON L6 AND L20  
 L29 125 SEA SPE=ON ABB=ON PLU=ON L6 AND L21  
 L30 15 SEA SPE=ON ABB=ON PLU=ON L6 AND L22  
 D SCA  
 L31 3 SEA SPE=ON ABB=ON PLU=ON L30 AND L23  
 D SCA L28  
 L32 5730 SEA SPE=ON ABB=ON PLU=ON L6 AND ((L12 OR L13 OR L14 OR L15  
 OR L16 OR L17 OR L18 OR L19) OR L21 OR (L23 OR L24 OR L25 OR  
 L26 OR L27))  
 L33 1295 SEA SPE=ON ABB=ON PLU=ON L32 AND P/DIT  
 L34 4435 SEA SPE=ON ABB=ON PLU=ON L32 NOT L33

10/810211

L35 2914 SEA SPE=ON ABB=ON PLU=ON L34 AND PY<2004  
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 L36 635 SEA SPE=ON ABB=ON PLU=ON L33 AND PRD<20030326  
 L37 620 SEA SPE=ON ABB=ON PLU=ON L33 AND AD<20030326  
 L38 541 SEA SPE=ON ABB=ON PLU=ON L33 AND PD<20030326  
 L39 3584 SEA SPE=ON ABB=ON PLU=ON (L35 OR L36 OR L37 OR L38)  
 L40 56 SEA SPE=ON ABB=ON PLU=ON L39 AND L15

FILE 'REGISTRY' ENTERED AT 10:07:45 ON 28 AUG 2009

D SCA L9  
 D SCA L8  
 L41 1 SEA SPE=ON ABB=ON PLU=ON L8 AND 5/O  
 D SCA  
 D IDE

FILE 'ZCAPLUS' ENTERED AT 10:09:09 ON 28 AUG 2009

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 L43 136 SEA SPE=ON ABB=ON PLU=ON L5 (L) AGR/RL  
 L44 95 SEA SPE=ON ABB=ON PLU=ON L43 AND P/DT  
 L45 41 SEA SPE=ON ABB=ON PLU=ON L43 NOT L44  
 L46 20 SEA SPE=ON ABB=ON PLU=ON L45 AND PY<2004  
 L47 41 SEA SPE=ON ABB=ON PLU=ON L44 AND PRD<20030326  
 L48 30 SEA SPE=ON ABB=ON PLU=ON L44 AND PD<20030326  
 L49 41 SEA SPE=ON ABB=ON PLU=ON L44 AND AD<20030326  
 L50 61 SEA SPE=ON ABB=ON PLU=ON (L46 OR L47 OR L48 OR L49)  
 L51 3586 SEA SPE=ON ABB=ON PLU=ON L50 OR L39  
 L52 675 SEA SPE=ON ABB=ON PLU=ON L51 AND L41  
 L53 12 SEA SPE=ON ABB=ON PLU=ON L50 AND L41  
 L54 2709 SEA SPE=ON ABB=ON PLU=ON L34 AND PY<2003  
 L55 3379 SEA SPE=ON ABB=ON PLU=ON L54 OR (L36 OR L37 OR L38)  
 L56 17 SEA SPE=ON ABB=ON PLU=ON L45 AND PY<2003  
 L57 58 SEA SPE=ON ABB=ON PLU=ON L56 OR (L47 OR L48 OR L49)  
 L58 3381 SEA SPE=ON ABB=ON PLU=ON L55 OR L57  
 L59 12 SEA SPE=ON ABB=ON PLU=ON L58 AND (L41 (L) AGR/RL)  
 L60 10 SEA SPE=ON ABB=ON PLU=ON L59 AND L23  
 L\*\*\* DEL 0 S L60 NOT L59  
 L61 2 SEA SPE=ON ABB=ON PLU=ON L59 NOT L60  
 D SCA  
 E CEREAL+ALL/CT  
 E E2+ALL/CT  
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 L64 18095 SEA SPE=ON ABB=ON PLU=ON SORGHUM/BI  
 L65 4291 SEA SPE=ON ABB=ON PLU=ON SECALE CEREALE/BI  
 L66 5269 SEA SPE=ON ABB=ON PLU=ON PANICUM/BI  
 L67 16049 SEA SPE=ON ABB=ON PLU=ON HORDEUM VULGARE/BI  
 L68 2362 SEA SPE=ON ABB=ON PLU=ON FAGOPYRUM ESCULENTUM/BI  
 L69 47260 SEA SPE=ON ABB=ON PLU=ON CEREAL?/BI  
 L70 57166 SEA SPE=ON ABB=ON PLU=ON BARLEY?/BI  
 L71 24491 SEA SPE=ON ABB=ON PLU=ON BRAN/BI  
 L72 143166 SEA SPE=ON ABB=ON PLU=ON CORN/BI  
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 L74 118899 SEA SPE=ON ABB=ON PLU=ON RICE/BI  
 L75 130626 SEA SPE=ON ABB=ON PLU=ON COTTON/BI  
 L76 139287 SEA SPE=ON ABB=ON PLU=ON SOYBEAN?/BI  
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 OR L66 OR L67 OR L68 OR L69 OR L70 OR L71 OR L72 OR L73 OR L74  
 OR L75 OR L76)  
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 L79 300 SEA SPE=ON ABB=ON PLU=ON L41 (L) USES/RL

10/810211

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          D SCA
L81      2 SEA SPE=ON  ABB=ON  PLU=ON  L80 AND L23
L82      3 SEA SPE=ON  ABB=ON  PLU=ON  L80 AND 3/CC
L83      9058 SEA SPE=ON  ABB=ON  PLU=ON  L5 (L) USES/RL
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L85      10 SEA SPE=ON  ABB=ON  PLU=ON  L84 AND L23
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L86      5 SEA SPE=ON  ABB=ON  PLU=ON  L77 AND (L26 OR L27)
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L87      1 SEA SPE=ON  ABB=ON  PLU=ON  L86 AND NEW GROWTH/TI
L88      7 SEA SPE=ON  ABB=ON  PLU=ON  L5 (L) L21
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L91      0 SEA SPE=ON  ABB=ON  PLU=ON  L90 AND L23
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FILE 'REGISTRY' ENTERED AT 11:05:21 ON 28 AUG 2009

FILE 'ZCAPLUS' ENTERED AT 11:05:23 ON 28 AUG 2009

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          D STAT QUE L31
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          D STAT QUE L82
          D STAT QUE L85
          D STAT QUE L87
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          L85 OR L87
          D IALL HITSTR L92 1-27
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FILE HOME

FILE REGISTRY

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FILE LAST UPDATED: 27 Aug 2009 (20090827/ED)  
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Jun 2009  
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Jun 2009

ZCAplus now includes complete International Patent Classification (IPC) reclassification data for the third quarter of 2009.

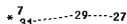
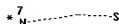
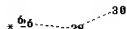
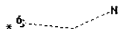
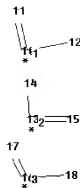
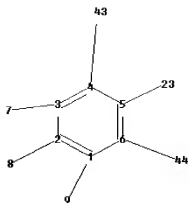
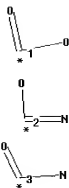
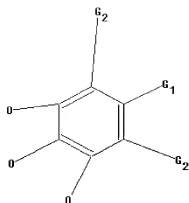
CAS Information Use Policies apply and are available at:

<http://www.cas.org/legal/infopolicy.html>

This file contains CAS Registry Numbers for easy and accurate substance identification.

The ALL, BIB, MAX, and STD display formats in the CA/CAPLUS family of databases have been updated to include new citing references information. This enhancement may impact record import into database management software. For additional information, refer to NEWS 9.

Uploading L1.str



```

chain nodes :
7  8  9 10 11 12 13 14 15 16 17 18 23 24 25 26 27 28 29 30 31
32 33 34 43 44
ring nodes :
1  2  3  4  5  6
chain bonds :
1-9  2-8  3-7  4-43  5-23  6-44  10-11  10-12  13-14  13-15  16-17  16-18  26-28
27-29  28-30  29-31
ring bonds :
1-2  1-6  2-3  3-4  4-5  5-6
exact/norm bonds :
1-9  2-8  3-7  4-43  5-23  6-44  10-11  10-12  13-14  13-15  16-17  16-18  26-28
27-29  28-30  29-31
normalized bonds :

```

10/810211

1-2 1-6 2-3 3-4 4-5 5-6

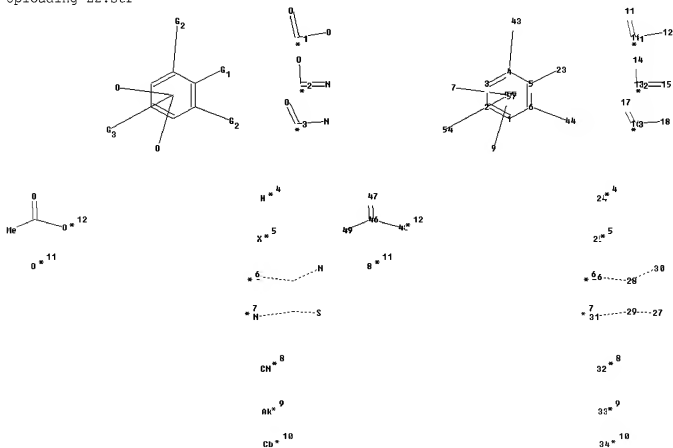
G1:[\*1],[\*2],[\*3]

G2:[\*4],[\*5],[\*6],[\*7],[\*8],[\*9],[\*10]

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:CLASS 8:CLASS 9:CLASS 10:CLASS  
 11:CLASS 12:CLASS 13:CLASS 14:CLASS 15:CLASS 16:CLASS 17:CLASS 18:CLASS  
 23:CLASS 24:CLASS  
 25:CLASS 26:CLASS 27:CLASS 28:CLASS 29:CLASS 30:CLASS 31:CLASS 32:CLASS  
 33:CLASS 34:Atom  
 43:CLASS 44:CLASS

Uploading L2.str



chain nodes :

7 8 9 10 11 12 13 14 15 16 17 18 23 24 25 26 27 28 29 30 31  
 32 33 34 43 44 46 47 48 49 54

ring nodes :

1 2 3 4 5 6

chain bonds :

4-43 5-23 6-44 10-11 10-12 13-14 13-15 16-17 16-18 26-28 27-29 28-30  
 29-31 46-47 46-48 46-49

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6

exact/norm bonds :



10/810211

4-43 5-23 6-44 10-11 10-12 13-14 13-15 16-17 16-18 26-28 27-29 28-30  
29-31 46-47 46-48  
exact bonds :  
46-49  
normalized bonds :  
1-2 1-6 2-3 3-4 4-5 5-6

G1:[\*1],[\*2],[\*3]

G2:[\*4],[\*5],[\*6],[\*7],[\*8],[\*9],[\*10]

G3:[\*11],[\*12]

Connectivity :

8:1 E exact RC ring/chain

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:CLASS 8:CLASS 9:CLASS 10:CLASS  
11:CLASS 12:CLASS 13:CLASS 14:CLASS 15:CLASS 16:CLASS 17:CLASS 18:CLASS  
23:CLASS 24:CLASS  
25:CLASS 26:CLASS 27:CLASS 28:CLASS 29:CLASS 30:CLASS 31:CLASS 32:CLASS  
33:CLASS 34:Atom  
43:CLASS 44:CLASS 46:CLASS 47:CLASS 48:CLASS 49:CLASS 54:CLASS 55:CLASS  
56:CLASS 57:CLASS

=>